



# SERVICE MANUAL

VHF MARINE TRANSCEIVER

## IC-M504

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S-14225HZ-C1-①

Dec. 2006

Icom Inc.

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## INTRODUCTION

This service manual describes the latest service information for the **IC-M504** MARINE TRANSCEIVER at the time of publication.

MODEL	VERSION	SYMBOL	COLOR
IC-M504	U.S.A.	[USA]	Black
		[USA-1]	Gray
		[USA-2]	Black

To upgrade quality, all electrical or mechanical parts and internal circuits are subject to change without notice or obligation.

## PRECAUTIONS

**NEVER** connect the transceiver to an AC outlet or to a DC power supply that uses more than 16 V. Such a connection could cause a fire or electric hazard.

**DO NOT** expose the transceiver to rain, snow or any liquids.

**DO NOT** reverse the polarities of the power supply when connecting the transceiver.

**DO NOT** apply an RF signal of more than 20 dBm (100 mW) to the antenna connector. This could damage the transceiver's front end.



## ORDERING PARTS

Be sure to include the following four points when ordering replacement parts:

1. 10-digit Icom parts number
2. Component name and informations
3. Equipment model name and unit name
4. Quantity required

### <SAMPLE ORDER>

1130007610 S.IC	μPD3140GS	IC-M504	Main unit	5 pieces
8810010610 Screw	PH B0 M3×8 SUS	IC-M504	Chassis	10 pieces

Addresses are provided on the inside back cover for your convenience.

## REPAIR NOTES

1. Make sure the problem is internal before disassembling the transceiver.
2. **DO NOT** open the transceiver until the transceiver is disconnected from its power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts. An insulated turning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the transceiver is defective.
6. **DO NOT** transmit power into a signal generator or a sweep generator.
7. **ALWAYS** connect a 40 dB to 50 dB attenuator between the transceiver and a deviation meter or spectrum analyzer when using such test equipment.
8. **READ** the instructions of test equipment thoroughly before connecting equipment to the transceiver.

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# SECTION 1 SPECIFICATIONS

## ■ GENERAL

• Frequency coverage	: TX 156.025–157.425 MHz RX 156.050–163.275 MHz CH70 RX 156.525 MHz
• Type of emission	: 16K0G3E (FM), 16K0G2B (DSC)
• Antenna impedance	: 50 $\Omega$ (Nominal)
• Operating temperature range	: –4°F to +140°F
• Power supply requirement	: 13.8 V DC $\pm$ 15% (negative ground)
• Current drain (At 13.8 V DC ; approx.)	: Receiving 1.5 A (at max. audio) Transmitting 5.5 A (at 25 W)
• Dimensions (Projections not included)	: 6 1/2 (W)×4 11/32 (H)×4 27/32 (D) in.
• Weight (Approx.)	: 3 lb 19 oz.

## ■ TRANSMITTER

• Output power (At 13.8 V DC)	: 25 W (High)/1 W (Low)
• Modulation	: Variable reactance frequency modulation
• Maximum frequency deviation	: $\pm$ 5.0 kHz
• Frequency stability	: Less than $\pm$ 10 ppm (–4°F to +140°F)
• Spurious emissions	: Less than 70 dBc (at 25 W) Less than 56 dBc (at 1 W)
• Adjacent channel power	: More than 70 dB
• Audio harmonic distortion	: Less than 10% (at 60% deviation)
• Residual modulation	: More than 40 dB
• Audio frequency response	: +1 dB to –3 dB of 6 dB oct. from 300 Hz to 2500 Hz
• Microphone impedance	: 2 k $\Omega$

## ■ RECEIVER

• Receive system	: Double conversion superheterodyne system
• Intermediate frequencies	: 1st IF: 21.7 MHz, 2nd IF: 450 kHz (Normal RX) 1st IF: 31.05 MHz, 2nd IF: 450 kHz (CH70 RX)
• Sensitivity	: –13 dB $\mu$ typical at 12 dB SINAD
• Squelch sensitivity	: –10 dB $\mu$
• Adjacent channel selectivity (typ.)	: 80 dB (Normal RX) 75 dB (CH70 RX)
• Spurious response (typ.)	: 80 dB (Normal RX) 75 dB (CH70 RX)
• Intermodulation rejection ratio (typ.)	: 80 dB (Normal RX) 75 dB (CH70 RX)
• Hum and Noise (typ.)	: 40 dB
• Audio frequency response	: +1 dB to –3 dB of –6 dB oct. from 300 Hz to 3000 Hz
• Audio output power	: 4.5 W typical at 10% distortion with a 4 $\Omega$ load
• Audio output impedance	: 4 $\Omega$

Specifications are measured in accordance with TIA/EIA 603

**All stated specifications are subject to change without notice or obligation.**

• Channel list

Channel number					Frequency (MHz)				
USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive
	01	01	156.050	160.650					
01A			156.050	156.050					
	02	02	156.100	160.700					
	03	03	156.150	160.750					
03A			156.150	156.150					
	04		156.200	160.800					
		04A	156.200	156.200					
	05		156.250	160.850					
05A		05A	156.250	156.250					
06	06	06	156.300	156.300					
	07		156.350	160.950					
07A		07A	156.350	156.350					
08	08	08	156.400	156.400					
09	09	09	156.450	156.450					
10	10	10	156.500	156.500					
11	11	11	156.550	156.550					
12	12	12	156.600	156.600					
13 <sup>2</sup>	13	13 <sup>1</sup>	156.650	156.650					
14	14	14	156.700	156.700					
15 <sup>2</sup>	15 <sup>1</sup>	15 <sup>1</sup>	156.750	156.750					
16	16	16	156.800	156.800					
17 <sup>1</sup>	17	17 <sup>1</sup>	156.850	156.850					
	18		156.900	161.500					
18A		18A	156.900	156.900					
	19		156.950	161.550					

Channel number					Frequency (MHz)				
USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive
19A		19A	156.950	156.950					
20	20	20 <sup>1</sup>	157.000	161.600					
20A			157.000	157.000					
	21	21	157.050	161.650					
21A		21A	157.050	157.050					
		21b	Rx only	161.650					
	22		157.100	161.700					
22A		22A	157.100	157.100					
	23	23	157.150	161.750					
23A			157.150	157.150					
24	24	24	157.200	161.800					
25	25	25	157.250	161.850					
		25b	Rx only	161.850					
26	26	26	157.300	161.900					
27	27	27	157.350	161.950					
28	28	28	157.400	162.000					
		28b	Rx only	162.000					
	60	60	156.025	160.625					
	61		156.075	160.675					
61A		61A	156.075	156.075					
	62		156.125	160.725					
		62A	156.125	156.125					
	63		156.175	160.775					
63A			156.175	156.175					
	64	64	156.225	160.825					

Channel number					Frequency (MHz)				
USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive
64A		64A	156.225	156.225					
	65		156.275	160.875					
65A	65A	65A	156.275	156.275					
	66		156.325	160.925					
66A	66A	66A <sup>1</sup>	156.325	156.325					
67 <sup>2</sup>	67	67	156.375	156.375					
68	68	68	156.425	156.425					
69	69	69	156.475	156.475					
70 <sup>3</sup>	70 <sup>3</sup>	70 <sup>3</sup>	156.525	156.525					
71	71	71	156.575	156.575					
72	72	72	156.625	156.625					
73	73	73	156.675	156.675					
74	74	74	156.725	156.725					
77 <sup>1</sup>	77	77 <sup>1</sup>	156.875	156.875					
	78		156.925	161.525					
78A		78A	156.925	156.925					
	79		156.975	161.575					
79A		79A	156.975	156.975					
	80		157.025	161.625					
80A		80A	157.025	157.025					
	81		157.075	161.675					
81A		81A	157.075	157.075					
	82		157.125	161.725					
82A		82A	157.125	157.125					
	83	83	157.175	161.775					

Channel number					Frequency (MHz)				
USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive
83A		83A	157.175	157.175					
		83b	Rx only	161.775					
84	84	84	157.225	161.825					
84A			157.225	157.225					
85	85	85	157.275	161.875					
85A			157.275	157.275					
86	86	86	157.325	161.925					
86A			157.325	157.325					
87	87	87	157.375	161.975					
87A			157.375	157.375					
88	88	88	157.425	162.025					
88A			157.425	157.425					

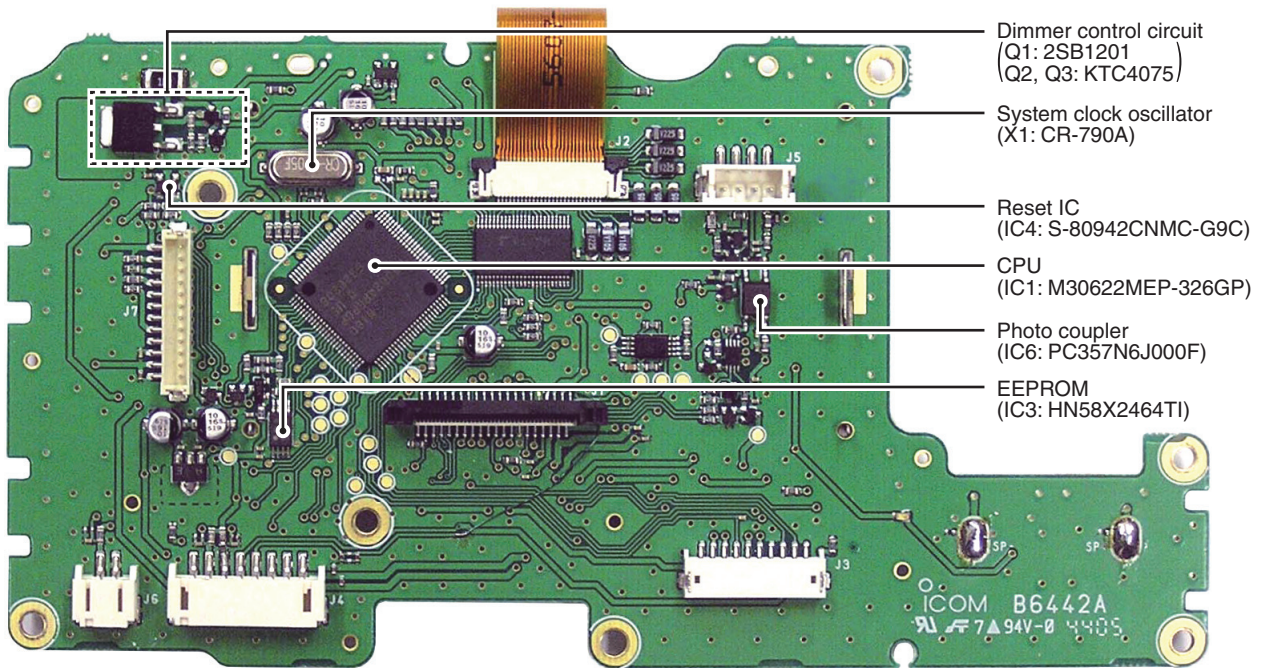
WX channel	Frequency (MHz)	
	Transmit	Receive
1	RX only	162.550
2	RX only	162.400
3	RX only	162.475
4	RX only	162.425
5	RX only	162.450
6	RX only	162.500
7	RX only	162.525
8	RX only	161.650
9	RX only	161.775
10	RX only	163.275

<sup>1</sup>Low power only. <sup>2</sup>Momentary high power. <sup>3</sup>DSC operation only **NOTE:** Simplex channels, 3, 21, 23, 61, 64, 81, 82 and 83 **CANNOT** be lawfully used by the general public in U.S.A. waters.

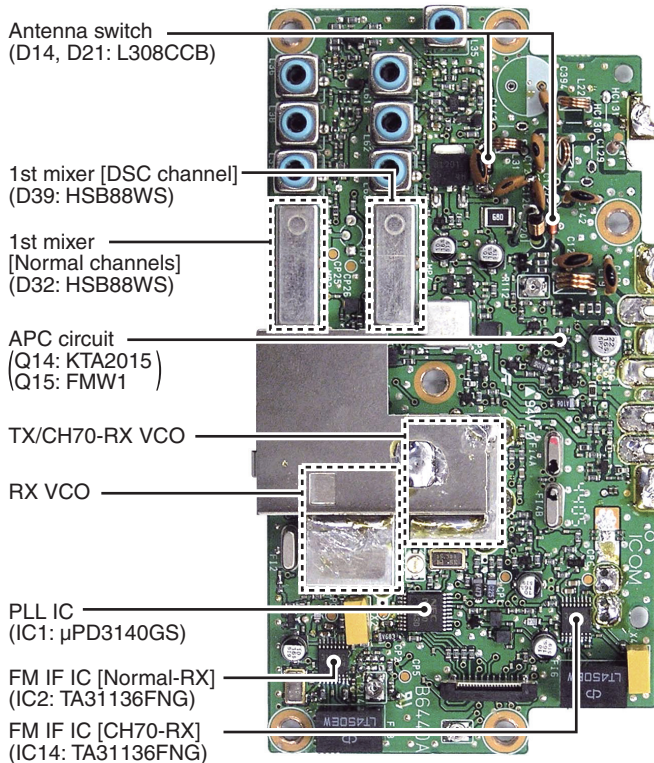


## SECTION 2 INSIDE VIEWS

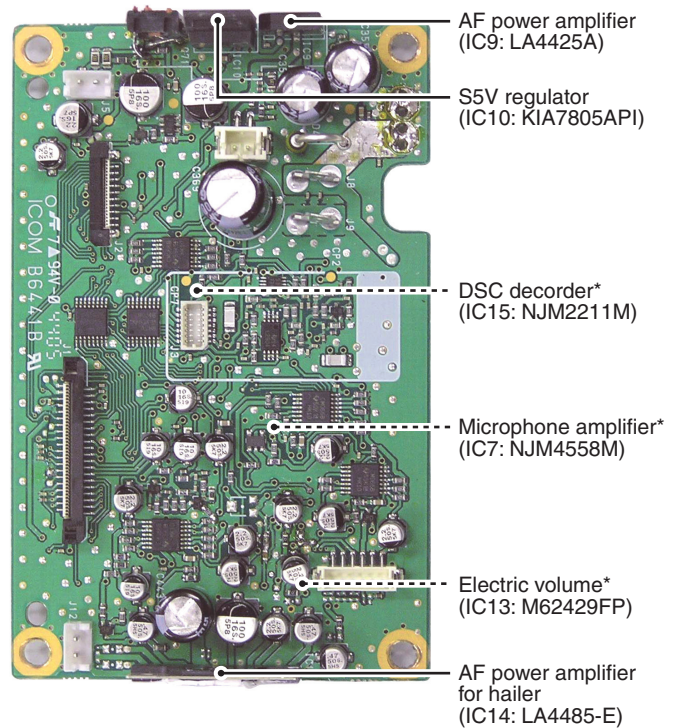
### • LOGIC BOARD



### • MAIN UNIT



### • AF UNIT



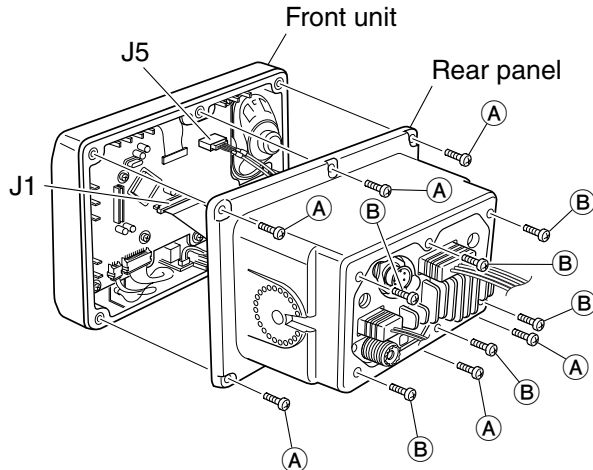
\*Located under side of the point

## SECTION 3

## DISASSEMBLY INSTRUCTIONS

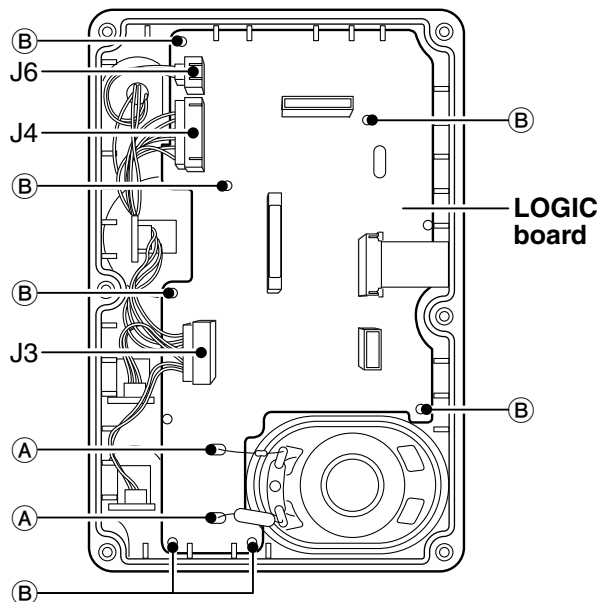
### • Opening the transceiver case

- ① Unscrew 6 screws (A).
- ② Disconnect 2 cables from J1 and J5.
- ③ Remove the front unit.
- ④ Unscrew 6 screws (B), and remove the rear panel.



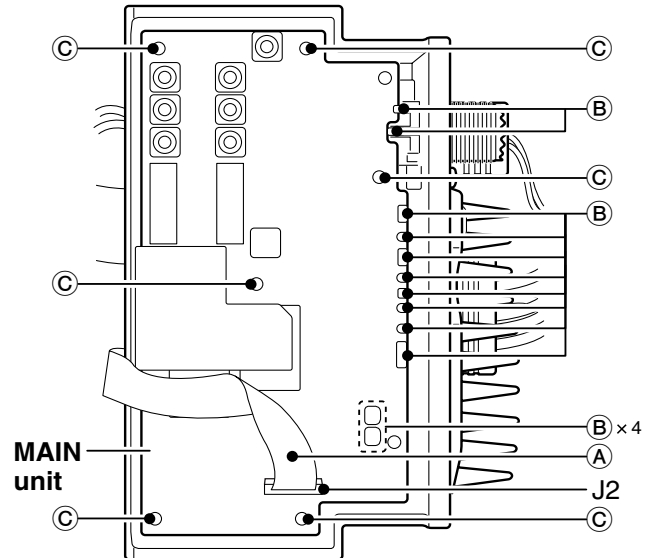
### • Removing the LOGIC board

- ① Disconnect 3 connectors from J6, J4 and J3.
- ② Unsolder 2 points (A).
- ③ Unscrew 7 screws (B), and remove the LOGIC board from the front panel.



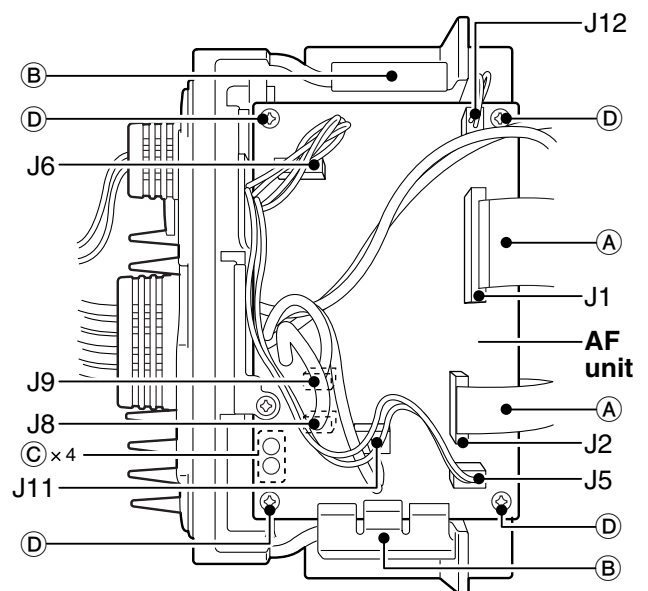
### • Removing the MAIN unit

- ① Disconnect the flat cable (A) from J2.
- ② Unsolder 14 points (B).
- ③ Unscrew 6 screws (C), and remove the MAIN unit from the chassis.



### • Removing the AF unit

- ① Disconnect 2 flat cables (A) from J1 and J2.
- ② Disconnect 6 connectors from J5, J6, J8, J9, J11 and J12.
- ③ Remove 2 clips (B).
- ④ Unsolder 4 points (C).
- ⑤ Unscrew 4 screws (D), and remove the AF unit from the chassis.



## SECTION 4 CIRCUIT DESCRIPTION

### 4-1 RECEIVER CIRCUITS

#### 4-1-1 ANTENNA SWITCH (MAIN UNIT)

The received signals from the antenna connector are passed through the antenna switch which toggles the receive (RX) line and transmit (TX) line.

The received signals from the antenna connector are passed through the low-pass filter (LPF; L21, L22, C126–C129) and the antenna switch (D14 and D21 are OFF).

While transmitting, voltage on the T5V line is applied to D14 and D21, and these are turned ON. Thus the TX line is connected to the antenna, and RX line is connected to the GND to prevent transmit signal entering.

While receiving, no voltage is applied to D14 and D21, and these are turned OFF. Thus the TX line and the antenna is disconnected to prevent received signals entering, and the RX line is disconnected from the GND, and the received signals are passed through the LPF (L31, C142, C143). The filtered signals are then applied to the RF circuits.

#### 4-1-2 RF CIRCUITS (MAIN UNIT)

The RF circuit amplifies received signals within the frequency coverage. The received signals are filtered at the bandpass filter (BPF) and amplified at the RF amplifier.

The received signals from the antenna switch (D14 and D21 are OFF) are divided into the signals for voice communications and the signals for DSC channel at the divider (L35, C151, C152). The divided signals (voice communications) are applied to the tuned RF amplifier (Q21, D26–D29, L36, L37, C161, C162). The amplified signals are then applied to the double balanced 1st mixer (D32, L40, L41) via a two-staged tunable BPF (D30, D31, L38, L39, C173–C178, C196).

#### 4-1-3 1st IF CIRCUITS (MAIN UNIT)

The received signals are converted into the 1st IF signal, and filtered and amplified in the 1st IF circuits.

The amplified received signals from the RF circuits are applied to the 1st mixer (D32, L40, L41), and converted into the 21.7 MHz 1st IF signal by being mixed with the 1st local oscillator (LO) signals from the VCO (Q72, D51, D52).

The converted 1st IF signal is amplified by the 1st IF amplifier (Q22, Q23), and passed through two 1st IF filters (F11, F12) to filter out adjacent signals. The filtered 1st IF signal is amplified by the 1st IF amplifier (Q24), then applied to the FM IF IC (IC2, pin 16).

#### 4-1-4 2nd IF AND DEMODULATOR CIRCUITS (MAIN UNIT)

The 1st IF signal is converted into the 2nd IF signal and demodulated in the FM IF IC.

The 1st IF signal from the 1st IF circuits is applied to the 450 kHz 2nd IF mixer in the FM IF IC (IC2, pin 16), and converted into the 2nd IF signal by being mixed with the 21.25 MHz 2nd LO signal from the reference oscillator (IC2, pin 1, X3).

The converted 2nd IF signal is output from pin 3, and passed through the 2nd IF filter (F13) to suppress sideband noise. The filtered 2nd IF signal is applied to the limiter amplifier (IC2, pin 5). The amplified 2nd IF signal is then FM-demodulated at the quadrature detector (IC2, pins 10, 11, X2) and output from pin 9. The demodulated AF signals are applied to the AF circuits.

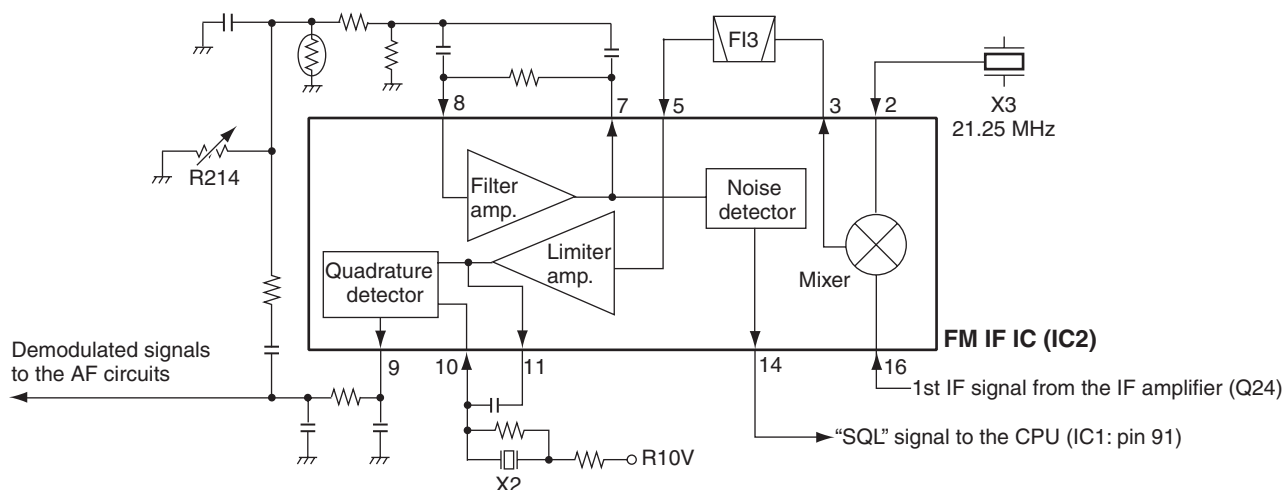
#### 4-1-5 AF AMPLIFIER CIRCUITS (AF UNIT)

The demodulated AF signals from the FM IF IC are amplified and filtered in the AF circuits.

The AF signals from the FM IF IC (MAIN UNIT; IC2, pin 9) are passed through the RX selector (IC26, pins 1, 7), AF mute switch (IC3, pins 10, 11), BPF (Q31, Q32) and another AF mute switch (IC4, pins 8, 9) in sequence.

The AF signals from the AF mute switch (IC4, pins 8, 9) are then applied to the volume control pot (VR UNIT; R1) to be adjusted its signal level (=audio output level). The level-adjusted AF signals are applied to the AF power amplifier (IC9, pin1) via the AF mute switch (Q65). The AF signals are obtained 4.5 W (typ.) of AF output power at the AF power amplifier (IC9), and output from pin 4, then applied to the internal speaker (FRONT UNIT; SP1), HM-126B/G or connected external speaker.

#### • 2nd IF AND DEMODULATOR CIRCUITS





Noise squelch circuit mutes AF output signals when no RF signals are received. By detecting noise components (30 kHz and higher signals) in the demodulated AF signals, the squelch circuit switches the AF mute switch ON and OFF.

The amplified noise components are converted into the pulse-type signal at the noise detector section, and output from pin 14 as the “SQL” signal. The “SQL” signal is applied to the CPU (LOGIC BOARD; IC1, pin 91), and the CPU outputs “EXSTB,” “EXTOE” signal to the expand IC (AF UNIT; IC27, pins 1, 15) according to the “SQL” signal level. Then the expand IC outputs “RMMUTEM” signal from pin 7 to the AF mute switch (AF UNIT; IC4, pin 6), and outputs “SPMUTE” signal from pin 12 to the AF mute switch (Q65) to cut off the AF line.

The AF signals from the microphone (MIC signals) are filtered and level-adjusted at microphone amplifier circuits.

The filtered MIC signals are passed through the deviation adjustment pot (MAIN UNIT; R327), then applied to the modulation circuit (MAIN UNIT; D2).

The modulation circuit modulates the VCO oscillating signal with the AF signals from the microphone.

The output signal of TX/CH70-RX VCO is amplified to transmit output power level by the transmit amplifiers.

The transmit signal from the TX/RX switch (D7) is applied to the YGR amplifier (Q10). The amplified transmit signal is applied to the power module (IC3, pin 1) and amplified to the transmit output level. The power-amplified transmit signal is output from pin 4, and passed through the LPF (L19, C121, C124) to filter out the harmonic components. The filtered transmit signal is passed through the antenna switch (D14 and D21 are ON) and another LPF (L21, L22, C126–C129) before being applied to the antenna connector (CHASSIS; J1).

The APC (Automatic Power Control) circuit stabilizes transmit output power to prevent transmit output power level change which is caused by load mismatching or heat effect, etc.. The APC circuit also selects transmit output power from high and low power.

The differential amplifier compares the detected voltage and reference voltage, and the difference of the voltage controls the bias of the power amplifier module (IC3) via Q14, to reduce/increase the gain of transmit power amplifiers for stable transmit output power.

The change of transmit output power is carried out by the power controller (Q17) using “H/L” signal from the expander (AF UNIT; IC27, pin 4). The transmit power muting is carried out by the TX mute switch (Q16), using the “TMUTE” signal from the expander (AF UNIT; IC27, pin 5).

The schematic diagram illustrates the transmitter circuit. It starts with a 5V regulator (T5V) providing power to the TX/RX switch (D7) and the YGR amplifier (Q10). The TX/RX switch (D7) is controlled by a signal from the buffer (Q7). The YGR amplifier (Q10) drives the Power module (IC3), which contains an S-AV35. The Power module is connected to the Power detector, which includes a Low Pass Filter (LPF) and a diode bridge (D12, D13). The Power detector is controlled by 'TMUTE' and 'H/L' signals through transistors Q16 and Q17, and a relay (Q15). A diode Q14 is connected to the Power module and the 5V regulator. The output of the Power detector is connected to the ANT SW (D14), which leads to the antenna.

### 4-3 PLL CIRCUITS

#### 4-3-1 VCO CIRCUITS (MAIN UNIT)

A VCO (Voltage Controlled Oscillator) is an oscillator whose oscillating frequency is controlled by adding voltage (lock voltage).

This transceiver has 2 VCO's; RX VCO (Q72, D51, D52) and TX/CH70-RX VCO (Q4, Q5, D1, D3). The RX VCO oscillates the 1st LO signals for voice communications channels reception, and the TX/CH70-RX VCO oscillates the transmit signal and the 1st LO signals for DSC channel reception.

##### 4-3-1-1 RX VCO

The RX VCO (Q72, D51, D52) output signals are amplified by the buffer amplifiers (Q74, Q76), and applied to the 1st mixer (D32, L40, L41) via the LPF (L12, C78, C79), to be mixed with the received signals to produce the 21.7 MHz 1st IF signal.

A portion of the VCO output is applied to the PLL IC (IC1, pin 2) via the buffer amplifiers (Q74, Q75) and the BPF (L75, C624, C625).

##### 4-3-1-2 TX/CH70-RX VCO

The TX/CH70-RX VCO (Q4, Q5, D1, D3) output signals are amplified by the buffer amplifiers (Q6, Q7),

##### • While receiving

The buffer-amplified TX/CH70-RX VCO output signals are applied to the 1st mixer (D39, L55, L56) via the TX/RX switch (D7 is OFF, D8 is ON) and the LPF (L65, C535, C537), to be mixed with the received signals to produce the 31.05 MHz 1st IF signal.

##### • While transmitting

The buffer-amplified TX/CH70-RX VCO output signals are applied to the transmit amplifiers via the TX/RX switch (D7 is ON, D8 is OFF).

A portion of the VCO output is applied to the PLL IC (IC1, pin 19) via the buffer amplifiers (Q3, Q6) and the BPF (L2, C34, C35).

#### 4-3-2 PLL CIRCUIT (MAIN UNIT)

The PLL circuit provides stable oscillation of the transmit and receive 1st LO frequencies. The PLL output frequencies are controlled by the divided ratio (N-data) from the CPU.

##### • RX VCO LOOP

The RX VCO output signals from the BPF (L75, C624, C625) are applied to the PLL IC (IC1, pin 2). The applied signals are divided at the prescaler and programmable counter according to the "PDATA" signal from the CPU (LOGIC BOARD; IC1, pin 49). The divided signal is phase-compared with the reference frequency signal from the reference frequency oscillator (X1), at the phase detector.

The phase difference is output from pin 8 as a pulse type signal after being passed through the internal charge pump. The output signal is converted into the DC voltage (lock voltage) by passing through the loop filter (R602, R603, R606, C602, C603, C606). The lock voltage is applied to the variable capacitors (D51 and D52 of RX VCO) and locked to keep the VCO frequency constant.

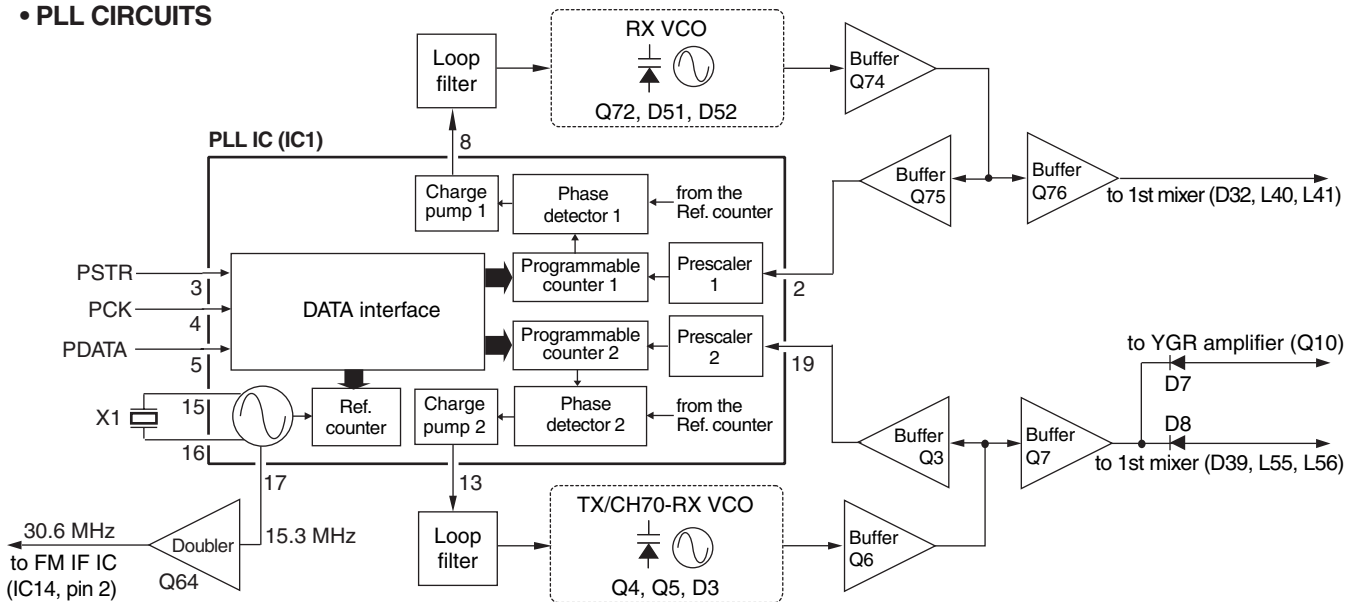
##### • TX/CH70-RX VCO LOOP

The output signal of TX/CH70-RX VCO from the BPF (L2, C34, C35) are applied to the PLL IC (IC1, pin 2). The applied signals are divided at the prescaler and programmable counter. The divided signal is phase-compared with the reference frequency signal from the reference frequency oscillator (X1), at the phase detector.

The phase difference is output from pin 8 as a pulse type signal. The output signal is converted into the DC voltage (lock voltage) by passing through the loop filter (R7-R9, R41, C4, C5, C43). The lock voltage is applied to the variable capacitors (D53 of TX/CH70-RX VCO) and locked to keep the VCO frequency constant.

If the oscillated signal drifts, its phase changes from that of the reference frequency, causing a lock voltage change to compensate for the drift in the VCO oscillating frequency.

##### • PLL CIRCUITS



## 4-4 DSC CRICUITS

The DSC circuit monitors the DSC channel CH70 (156.525 MHz) during stand-by.

#### 4-4-1 RF CIRCUITS (MAIN UNIT)

The divided signals (DSC channel) are from the divider (L35, C151, C152) are applied to the RF amplifier (Q61). The amplified received signals are passed through the BPF (L62, L63, C511, C512, C514–C516) to extract a 156.525 MHz (CH70) signal. The filtered signals are then applied to the double balanced 1st mixer (D39, L55, L56), and converted into the 31.05 MHz 1st IF signal by being mixed with the 1st local oscillator (LO) signals from the VCO (Q4, Q5, D1, D3).

#### 4-4-2 1st IF CIRUIT (MAIN UNIT)

The converted 1st IF signal is applied to the 1st IF amplifier (Q58, Q59), and the amplified 1st IF signal is passed through a pair of crystal filters (F14A, B). The filtered 1st IF signal is amplified by another IF amplifier (Q63), and is then applied to the FM IF IC (IC14, pin 16).

#### 4-4-3 2nd IF AND DEMODULATOR CIRCUITS (MAIN UNIT)

The 1st IF signal from the 1st IF circuits is applied to the 450 kHz 2nd IF mixer in the FM IF IC (IC14, pin 16) and converted into the 2nd IF signal by being mixed with the 30.6 MHz 2nd LO signal from the PLL IC (IC1, pin 17) via the doubler (Q64).

The converted 2nd IF signal is output from pin 3, and passed through the 2nd IF filter (FI6) to suppress sideband noise. The filtered 2nd IF signal is applied to the limiter amplifier (IC14, pin 5). The amplified 2nd IF signal is FM-demodulated at the quadrature detector (IC14, pins 10, 11, X4) and output from pin 9. The demodulated signals are applied to the DSC filters (AF UNIT: IC12) and AF circuits.

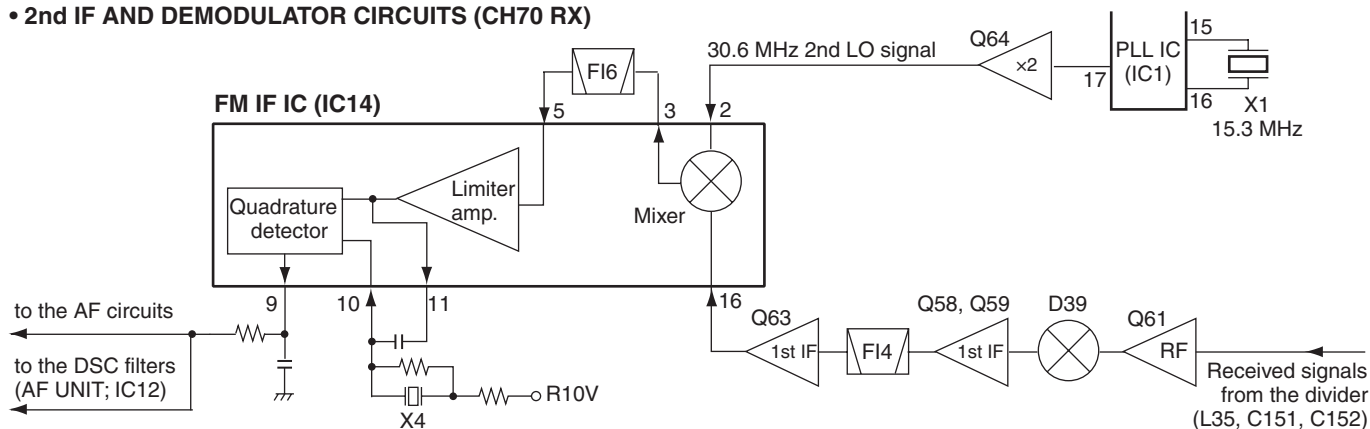
#### 4-4-4 DSC DECODE (AF UNIT)

The demodulated signals from FM IF IC (MAIN UNIT; IC14, pin 9) are filtered at the LPF (IC12, pins 1, 3) and HPF (IC12, pins 5, 7) to extract the DSC signal. The filtered signals are applied to the DSC decoder IC (IC15, pin 2). The decoded DSC signal is output from pin 7, then applied to the CPU (LOGIC BOARD; IC1, pin 17) to control the transceiver according to the received DSC call content.

#### 4-4-5 DSC ENCODE (LOGIC BOARD)

The DSC signal is generated by the CPU (IC1) and output from pin 1, and applied to the modulation signal line via the buffer amplifier (IC2, pins 5, 7). The DSC signal is filtered at the LPF (AF UNIT; IC8, pins 1, 3), level-adjusted by R327 (MAIN UNIT), then applied to the modulation circuit (MAIN UNIT; D2).

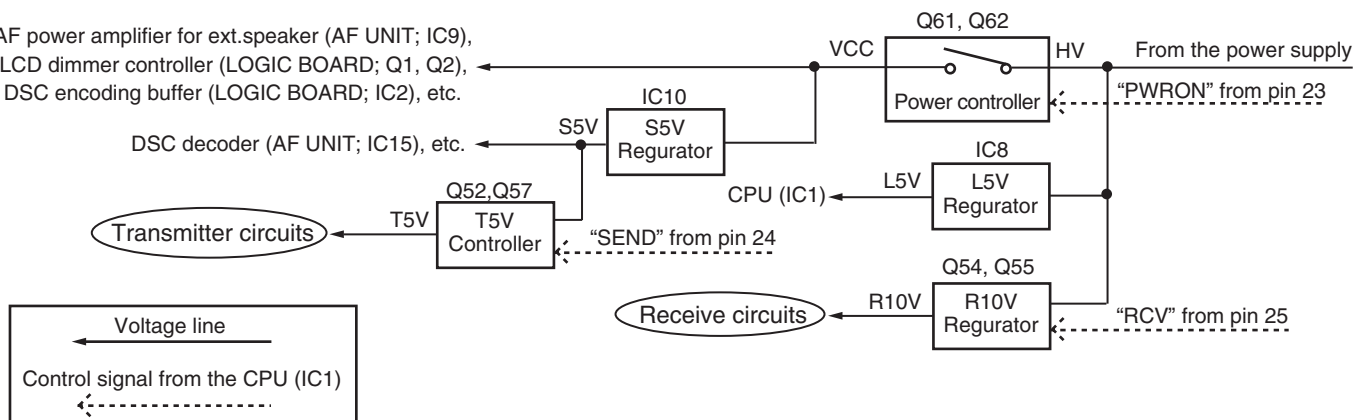
## • 2nd IF AND DEMODULATOR CIRCUITS (CH70 RX)



## 4-5 POWER SUPPLY CIRCUITS (MAIN UNIT)

Voltage from the connected power supply is routed to whole of the circuit in the transceiver via switches and regulators.

AF power amplifier for ext.speaker (AF UNIT; IC9),  
LCD dimmer controller (LOGIC BOARD; Q1, Q2),  
DSC encoding buffer (LOGIC BOARD; IC2), etc.



## 4-6 PORT ALLOCATIONS

### 4-6-1 CPU (LOGIC UNIT; IC1)

Pin No.	Port Name	Description
1	DSENC	Outputs DSC encode signal to the LPF (AF UNIT; IC8, pin 3).
2	BEEP	Outputs beep sounds to the AF power amplifier (IC9, pin 1).
3	PSTB	Outputs PLL strobe signal to the PLL IC (MAIN UNIT; IC1, pin 3).
4	EXTSTB	Outputs strobe signal to the expand IC's (AF UNIT; IC27/IC28, pin 1).
5	OPSTB	Outputs strobe signal to the attached optional scrambler unit via the option connector (AF UNIT; J3, pin 6).
16	DSDM	Inputs decoded ATIS/DSC signals from the DSC decoder (AF UNIT; IC11, pin 7).
17	DSD70	Inputs decoded DSC signals from the DSC decoder (AF UNIT; IC15, pin 7).
18	PWR	Input port for the [PWR] key. "Low"=When the key is pushed.
21	FOGC	Outputs fog horn signal mute signal to the fog horn mute switch (AF UNIT; IC4).
22	FOG	Outputs fog horn sound to the fog horn mute switch (AF UNIT; IC4).
23	PWRON	Outputs control signal to the power controller (AF UNIT; Q61, Q62).
24	SEND	Outputs T5 line control signal to the T5V controller (MAIN UNIT; Q52, Q57).
25	RCV	Outputs R10V line control signal to the R10V regulator (MAIN UNIT; Q54, Q55).
29-30	NMTXD, NMRXD	Data I/O ports for NMEA data.
35	EDATA	Data I/O port for EEPROM (LOGIC BOARD; IC3, pin 5).
36	ECK	Outputs clock signal to the EEPROM (LOGIC BOARD; IC3, pin 6).
38	EXTOE	Outputs OE signal to the expanders (AF UNIT; IC27/28, pin 15).
40	HANG	Input port for hang up detect signal from HM-126B/G.
41	PTT	Input port for the [PTT] switch of HM-126B/G. "Low"=When the switch is pushed.
42	EVDATA	Outputs serial data to the electric volume IC (AF UNIT; IC13, pin 4).
43	EVCK	Outputs clock signal to the electric volume IC (AF UNIT; IC13, pin 5).
45	DTRS	Input port for the [DISTRESS] key (LOGIC UNIT; S10). "Low"=When the key is pushed.
46	MENU	Input port for the [MENU] key (LOGIC UNIT; S9). "Low"=When the key is pushed.
47	CLR	Input port for the [CLR] key (LOGIC UNIT; S8). "Low"=When the key is pushed.
48	HAIL	Input port for the [HAIL] key (LOGIC UNIT; S7). "Low"=When the key is pushed.
49	LO/DX	Input port for the [LO/DX] key (LOGIC UNIT; S6). "Low"=When the key is pushed.
50	CH16	Input port for the [CH16] key (LOGIC UNIT; S5). "Low"=When the key is pushed.
51	ENT	Input port for the [ENTER] key. "Low"=When the key is pushed.
52	CH/WX	Input port for the [CH/WX] key (LOGIC UNIT; S4). "Low"=When the key is pushed.
53	SCAN	Input port for the [SCAN] key (LOGIC UNIT; S3). "Low"=When the key is pushed.
54	H/L	Outputs transmit power select signal to the TX power controller (MAIN UNIT; Q17). "High"=25 W, "Low"=1 W

Pin No.	Port Name	Description
58	UNLK	Input port for PLL unlock signal from the PLL IC (MAIN UNIT; IC1, pin 7). "High"=While the PLL is unlocked.
59	OPTIN	Input port for optional unit attachment detect signal VIA J3 pin 5 (AF UNIT). "Low"=While the optional scrambler unit is attached.
72, 73	DIALA, DIALB	Input port for [DIAL] (DIAL BOARD; DS1).
88	SQLV	Input port for squelch adjustment VR (SQL BOARD; R1).
89	LBAT	Input port for low power supply voltage detect signal.
90	TXDET	Input port for transmit output power level from the power detector (MAIN UNIT; D12, D13).
91	SQL	Input port for noise signal from the FM IF IC (MAIN UNIT; IC2, pin 14).
92	WXDEC	Input port for decoded weather alert signal from the FM IF IC (IC2, pin 9) via LPF (Q38).
99	PDATA	Outputs serial data to the PLL IC (MAIN UNIT; IC1, pin 5).
100	PCK	Outputs clock signal to the PLL IC (MAIN UNIT; IC1, pin 4).

### 4-6-2 EXPAND IC (AF UNIT; IC27)

Pin No.	Port Name	Description
5	TMUTE	Outputs transmit mute signal to the TX mute switch (MAIN UNIT; Q16). "High"=During mute.
6	ATT	Outputs attenuator control signal to the attenuator (MAIN UNIT; D22). "High"=During attenuator ON.
7	RMUTEM	Outputs AF mute signal to the AF mute switch (IC4, pin 6). "Low"=During mute.
11	HAMUTE	Outputs hailer mute signal to the hailer amplifier controller (Q66). "Low"=During mute.
12	SPMUTE	Outputs speaker mute signal to the AF mute switch (Q65). "High"=During mute.
13	RMUTEH	Outputs hailer mute signal to the AF mute switch (Q66). "Low"=During mute.

### 4-6-3 EXPAND IC (AF UNIT; IC28)

Pin No.	Port Name	Description
4	MMUTEM	Outputs MIC mute signal (for intercom) to AF mute switch (IC5). "Low"=During mute.
6	MMUTEH	Outputs MIC mute signal (for hailer) to AF mute switch (IC5). "Low"=During mute.
7	PTTM	Outputs MIC mute signal (for HM-126B/G) to AF mute switch (IC5). "Low"=During mute.
11	SCON	Outputs the attached scrambler control signal via J3. "High"=When the scrambler is activated.
12	SCUSE	Outputs scrambler by-pass (MIC signals) signal to the AF mute switch (IC4). "High"=When the attached scrambler is activated. "Low"=When the optional scrambler unit is not attached.
13	SCPASS	Outputs scrambler by-pass (demodulated signals) signal to the AF mute switch (IC4). "High"=When the attached scrambler unit is not activated or not attached.

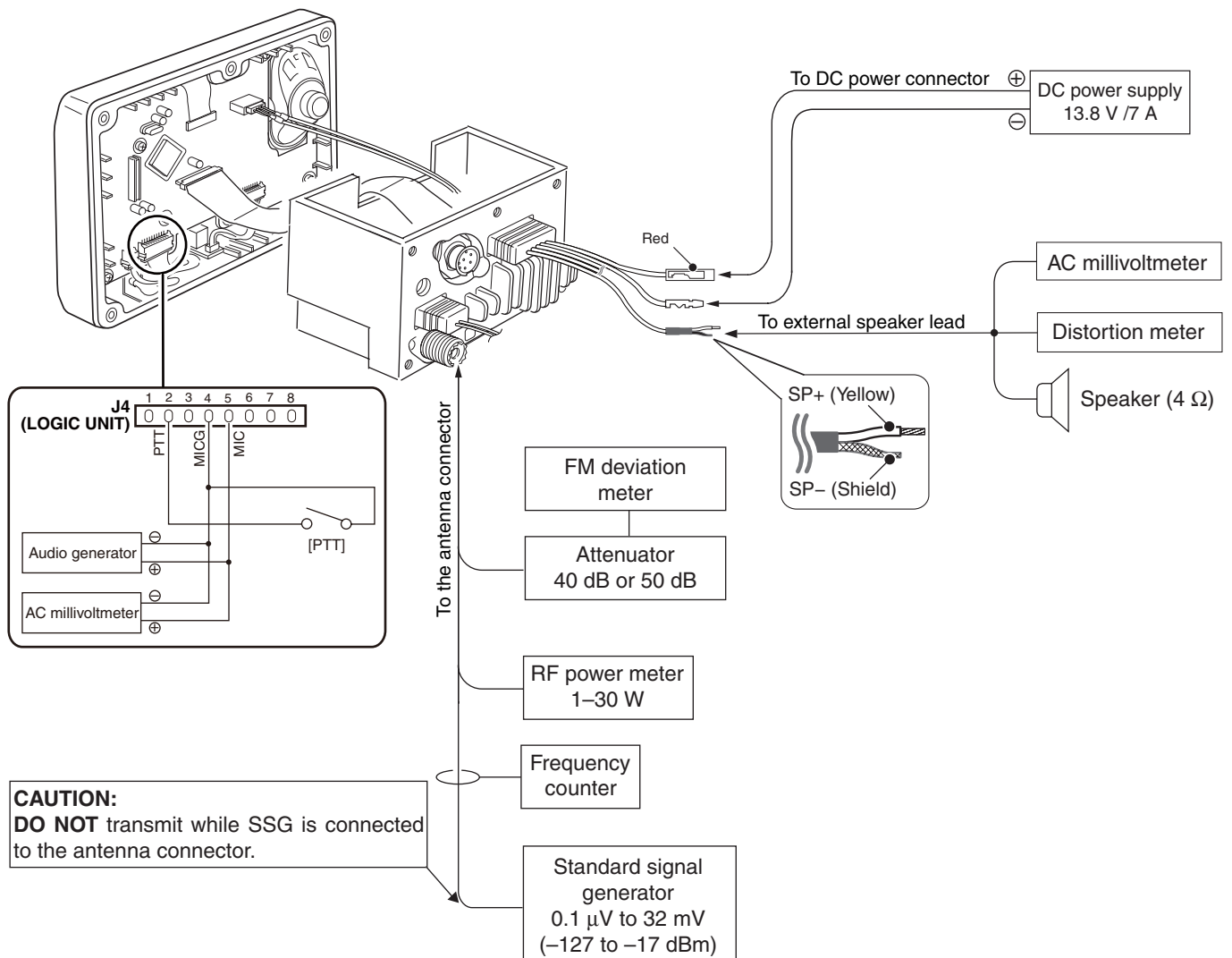
## SECTION 5 ADJUSTMENT PROCEDURES

### 5-1 PREPARATION

#### ■ REQUIRED TEST EQUIPMENTS

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
DC power supply	Output voltage : 13.8 V DC Current capacity : More than 7 A	DC voltmeter	Input impedance : 50 k $\Omega$ /V DC or better
RF power meter (terminated type)	Measuring range : 0.1–30 W Frequency range : 100–300 MHz Impedance : 50 $\Omega$ SWR : Less than 1.2 : 1	Standard signal generator (SSG)	Frequency range : 0.1–300 MHz Output level : 0.1 $\mu$ V to 32 mV (–127 to –17 dBm)
Frequency counter	Frequency range : 0.1–300 MHz Frequency accuracy: $\pm 1$ ppm or better Sensitivity : 100 mV or better	AC millivoltmeter	Measuring range : 10 mV to 10 V
FM deviation meter	Frequency range : 30–300 MHz Measuring range : 0 to $\pm 10$ kHz	External speaker	Input impedance : 4 $\Omega$ Capacity : More than 5 W
Audio generator	Frequency range : 300–3000 Hz Output level : 1–500 mV	Attenuator	Power attenuation : 40 or 50 dB Capacity : More than 30 W

#### • CONNECTION

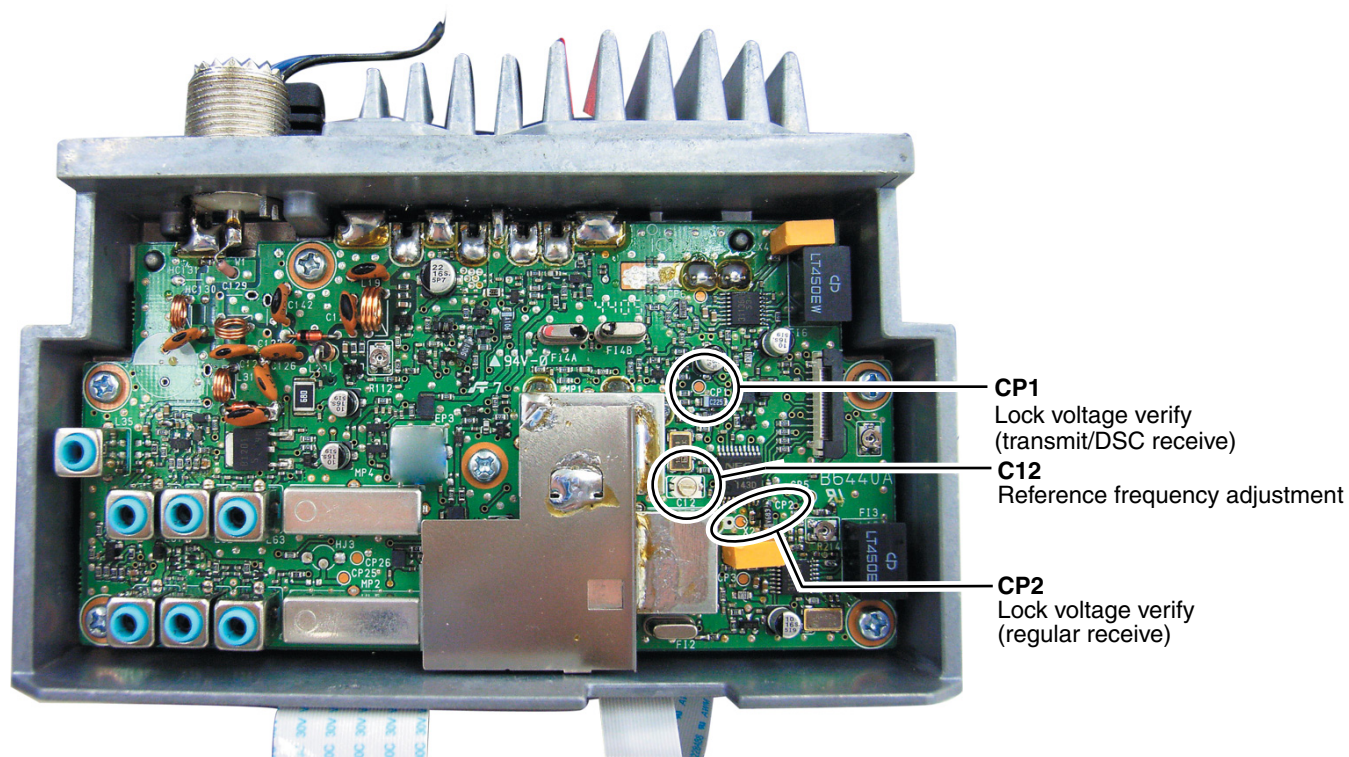




## 5-2 FREQUENCY ADJUSTMENT

ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
LOCK VOLTAGE (Regular receive)	1	• Channel : CH16 (156.800 MHz) • Receiving	MAIN	Connect a digital multi-meter or oscilloscope to the check point "CP2".	1.3–2.3 V	MAIN	Verify
	2	• Channel : CH16 (156.800 MHz) • Output power : Low • Transmitting		Connect a digital multi-meter or oscilloscope to the check point "CP1".	1.3–2.3 V		Verify
LOCK VOLTAGE (DSC receive)	1	• Receiving	MAIN	Connect a digital multi-meter or oscilloscope to the check point "CP1".	1.3–2.3 V	MAIN	Verify
REFERENCE FREQUENCY	1	• Channel : CH16 (156.800 MHz) • Output power : Low • Connect a power meter to the antenna connector. • Transmitting	Rear Panel	Loosely couple a frequency counter to the antenna connector.	156.800 MHz ±500 Hz	MAIN	C12

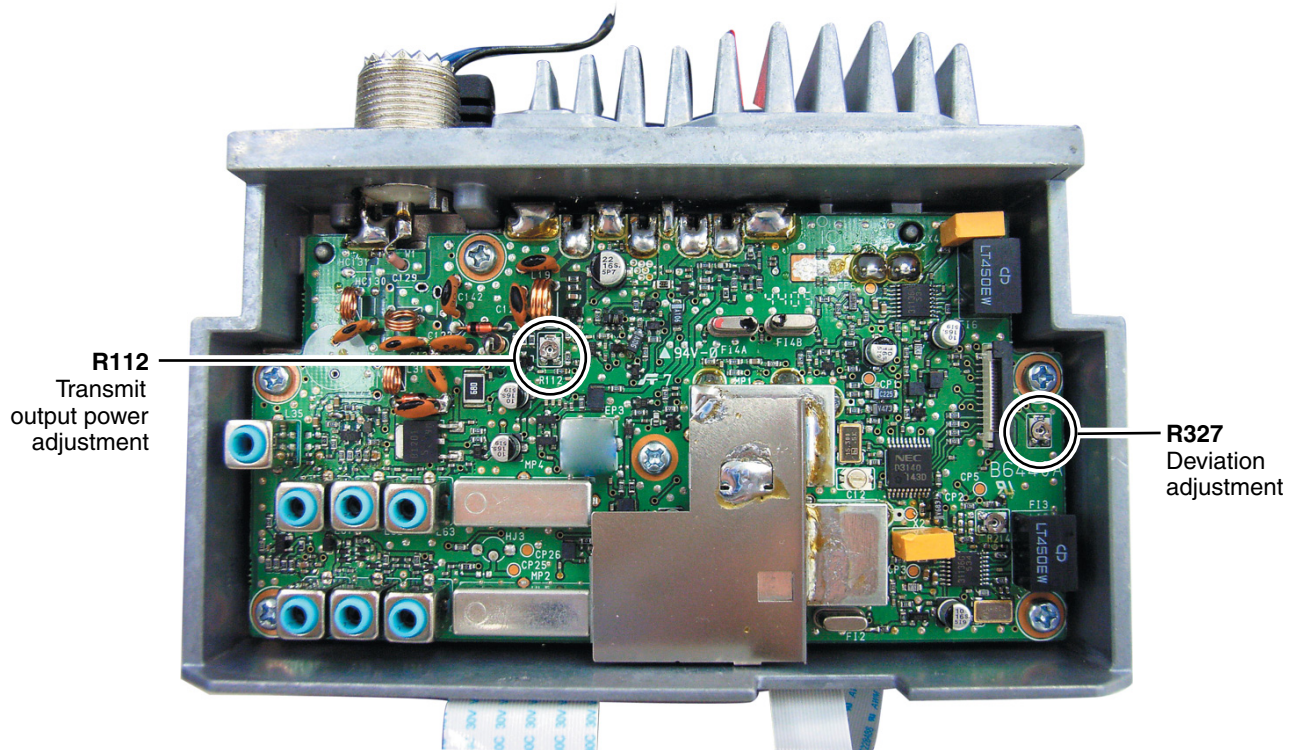
### • ADJUST AND MEASURE POINTS LOCATION (MAIN UNIT)



## 5-3 TRANSMIT ADJUSTMENT

ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
TRANSMIT OUTPUT POWER	1	<ul style="list-style-type: none"> <li>Channel : CH16 (156.800 MHz)</li> <li>Output power : High</li> <li>Transmitting</li> </ul>	Rear Panel	Connect an RF power meter to the antenna connector.	23–23.5 W	MAIN	R112
DEVIATION	1	<ul style="list-style-type: none"> <li>Channel : CH16 (156.800 MHz)</li> <li>Output power : Low</li> <li>Connect an audio generator to the MIC line (see the page 5-1) and set as;                             <ul style="list-style-type: none"> <li>Frequency : 1 kHz</li> <li>Level : 30 mV</li> </ul> </li> <li>Set the FM deviation meter as ;                             <ul style="list-style-type: none"> <li>HPF : OFF</li> <li>LPF : 20 kHz</li> <li>De-emphasis : OFF</li> <li>Detector : (P–P)/2</li> </ul> </li> <li>Transmitting</li> </ul>	Rear Panel	Connect an FM deviation meter to the antenna connector through an attenuator.	±4.25–4.35 kHz	MAIN	R327

### • ADJUST AND MEASURE POINTS LOCATION (MAIN UNIT)

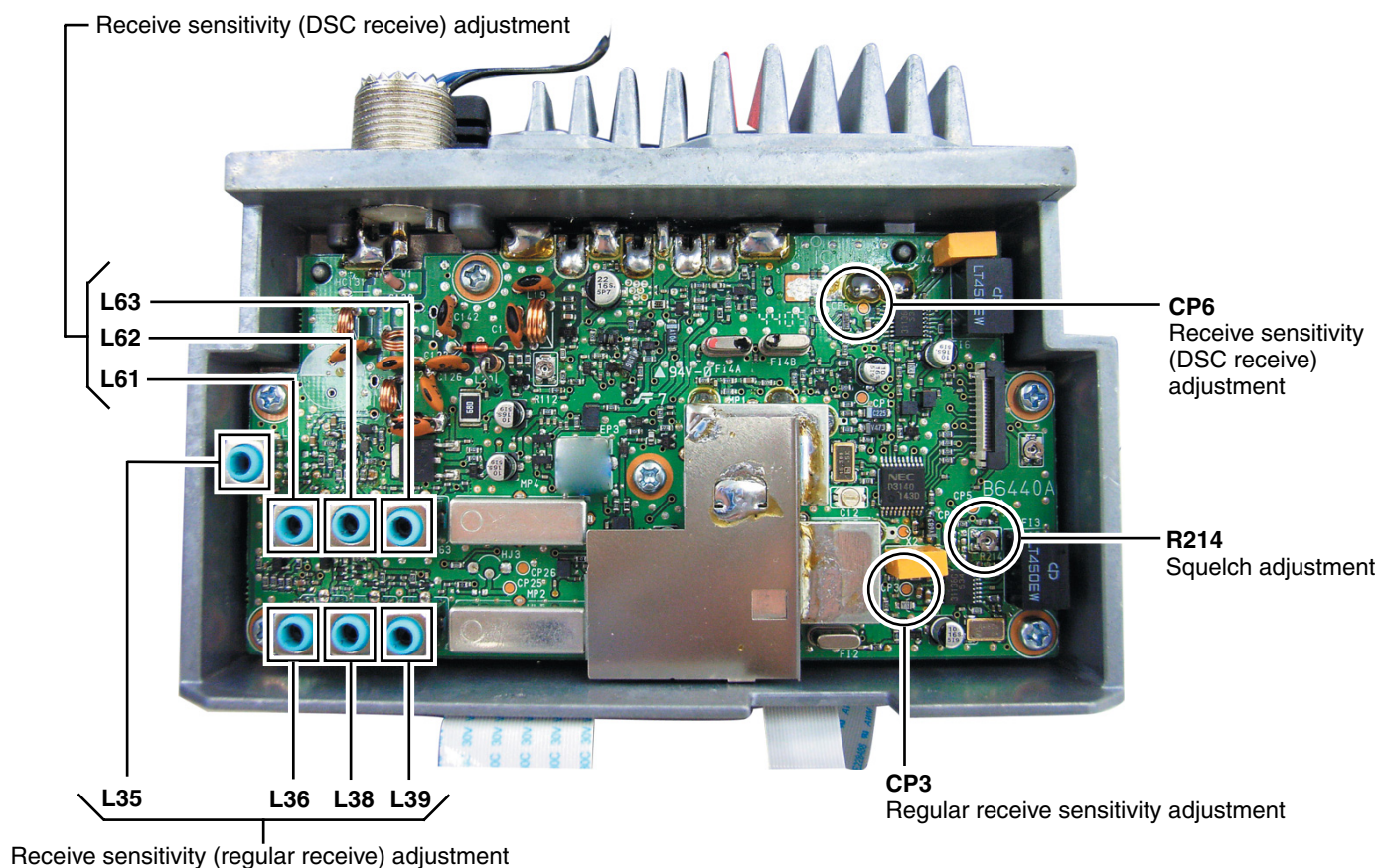




## 5-4 RECEIVE ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITION	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
RECEIVE SENSITIVITY (Regular receive)	1 <ul style="list-style-type: none"> <li>Channel : CH16 (156.800 MHz)</li> <li>[SQUELCH] : Max. counterclockwise</li> <li>Set the internal speaker OFF in the SET mode, and connect a distortion meter with a 4 <math>\Omega</math> load to [EXT SP] lead receptacle.</li> <li>Connect an SSG to the antenna connector and set as ; <ul style="list-style-type: none"> <li>Frequency : 156.800 MHz</li> <li>Level : 0 dBu (-107 dBm)</li> <li>Modulation : 1 kHz</li> <li>Deviation : <math>\pm 3</math> kHz</li> </ul> </li> <li>Receiving</li> </ul>	MAIN	Connect a DC volt meter or oscilloscope to the check point "CP3".	Maximum voltage	MAIN	L35 $\rightarrow$ L36 $\rightarrow$ L38 $\rightarrow$ L39 (Repeate two times or more.)
SQUELCH	1 <ul style="list-style-type: none"> <li>Channel : CH16 (156.800 MHz)</li> <li>[SQUELCH] : Max. counterclockwise</li> <li>Connect an SSG to the antenna connector and set as "RECEIVE SENSITIVITY" except the signal level. <ul style="list-style-type: none"> <li>Level : -4 dBu (-111 dBm)</li> </ul> </li> <li>Receiving</li> </ul>	External speaker	—	Squelch open	MAIN	Turn R214 clockwise to close the squelch. Then turn R214 counter-clockwise to set the point where the squelch opens.
RECEIVE SENSITIVITY (DSC receive)	1 <ul style="list-style-type: none"> <li>[SQUELCH] : Max. counterclockwise</li> <li>Connect an SSG to the antenna connector and set as "RECEIVE SENSITIVITY" except the frequency. <ul style="list-style-type: none"> <li>Frequency : 156.525 MHz (CH70)</li> </ul> </li> <li>Set the internal speaker OFF in the SET mode, and connect a distortion meter with a 4 <math>\Omega</math> load to the external speaker lead.</li> <li>Receiving</li> </ul>	MAIN	Connect a DC volt meter to the check point "CP6".	Maximum voltage	MAIN	L61 $\rightarrow$ L62 $\rightarrow$ L63 (Repeate two times or more.)

### • ADJUST AND MEASURE POINTS LOCATION (MAIN UNIT)



# SECTION 6 PARTS LIST

## • IC-M504

### [REPLACEMENT UNITS]

ORDER NO.	UNIT NAME	COLOR
0329140101	U M504 #01 FRONT (including HM-126B-3 ACC)	BLACK
0329140301	U M504 #03 FRONT (including HM-126G ACC)	GRAY

### [LOGIC BOARD]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
IC2	1110006380	S.IC LM2904PWR	B	72.9/41.6
IC3	1140008650	S.IC HN58X2464TI	B	120.3/30.8
IC4	1110005771	S.IC S-80942CNMC-G9CT2G	B	134.9/61.9
IC6	1170000352	S.IC PC357N6J000F	B	59.5/47.6
IC8	1180000421	S.IC TA78L05F (TE12R F)	B	132/25.3
IC9	1130013100	S.IC KIC7W14FK RTK/P	B	62.4/40.4
IC10	1130013200	S.IC TC74LCXR164245 (E F)	B	89.3/53.7
IC11	1180002380	S.IC S-817B33AMC-CWW-T2G	B	107/76.3
Q1	1520000651	S.TR 2SB1201S-TL-E	B	137.5/69.5
Q2	1530003900	S.TR KTC4075 BL-RTK/P	B	128.7/67.8
Q3	1530003900	S.TR KTC4075 BL-RTK/P	B	129.3/70.9
Q4	1530003960	S.TR KTC2875-B-RTK/P	B	123.1/36
Q5	1530002280	S.TR 2SC4081 T106 S	B	62.5/52.6
Q6	1590003580	S.TR KRC404 RTK/P	B	63.1/48.5
Q7	1530002280	S.TR 2SC4081 T106 S	B	60/32.8
Q8	1510000510	S.TR 2SA1576A T106R	B	62.8/32.5
Q9	1560000810	S.FET 2SK1069-4-TL	B	62.8/35.6
D1	1790001561	S.DIO 1SS372 (TE85R F)	B	125.9/35.1
D2	1750001320	S.DIO KDS4148U RTK/P	B	59.5/52.6
D3	1750001180	S.DIO KS122 RTK/P	B	61.8/55.4
D4	1730002360	S.ZEN MA8062-M (TX)	B	65.1/57.6
D5	1750001180	S.DIO KDS122 RTK/P	B	129.2/35.1
D43	1790001810	S.VSR AVR-M1005C080MTABB	B	126.2/17
X1	6050012041	S.XTL CR-790A (9.8304 MHz)	B	116.5/64.3
R2	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	101/39.3
R7	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	139.3/48.7
R22	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	72.8/44.3
R23	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	B	72.8/38.9
R24	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	B	77.7/40.4
R25	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	68.3/44
R26	7030003540	S.RES ERJ3GEYJ 682 V (6.8 k)	B	68.3/41.2
R31	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	119.8/36.9
R32	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	120.3/35.6
R33	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	128.4/18.8
R34	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	129.2/17
R35	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	143.5/17.1
R36	7030003650	S.RES ERJ3GEYJ 563 V (56 k)	B	100.1/59.4
R37	7030008051	S.RES ERA3YKD 184V (180 k)	B	100.8/61.4
R38	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	127.7/17
R41	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	102.8/29
R43	7030003570	S.RES ERJ3GEYJ 123 V (12 k)	B	137.1/58.2
R44	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	137.1/59.4
R45	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	134.4/58.2
R46	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	115.7/59.9
R48	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	139.3/51.3
R49	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	139.3/52.6
R51	7030006060	S.RES ERJ12YJ100U (10)	B	135.3/75.2
R54	7030004120	S.RES ERJ3GEYJ 203 V (20 k)	B	98.8/70.6
R55	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	100/70.6
R56	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	B	101.2/70.6
R57	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	102.4/70.6
R58	7030004120	S.RES ERJ3GEYJ 203 V (20 k)	B	103.6/70.6
R59	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	104.8/70.6
R60	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	B	106/70.6
R61	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	107.2/70.6
R62	7030003630	S.RES ERJ3GEYJ 393 V (39 k)	B	97.6/70.6
R63	7030003660	S.RES ERJ3GEYJ 683 V (68 k)	B	127.4/70.8
R64	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	B	130.6/67.5
R65	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	131.9/70.3
R66	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	B	131.9/67.5
R71	7030003370	S.RES ERJ3GEYJ 271 V (270)	B	49.4/15.9
R72	7030003370	S.RES ERJ3GEYJ 271 V (270)	B	134.2/17.5
R74	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	90.7/26.9
R75	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	54.7/23
R76	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	74/74.3

### [LOGIC BOARD]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R77	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	121.1/74.3
R79	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	121.9/56.1
R80	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	118.3/56.1
R81	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	120.5/39
R82	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	B	124.7/39.1
R83	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	B	122.6/38.4
R84	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	B	122.6/39.7
R85	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	61.6/58.4
R86	7030003210	S.RES ERJ3GEYJ 120 V (12)	B	64.4/54.4
R87	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	B	63/50.4
R88	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	67.8/49.5
R89	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	122.8/32.9
R91	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	B	60.9/35.5
R92	7030003280	S.RES ERJ3GEYJ 470 V (47)	B	65.4/32.2
R93	7030003430	S.RES ERJ3GEYJ 821 V (820)	B	58/54.9
R94	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	B	62.6/43.7
R95	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	B	65.4/33.4
R96	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	65.4/34.7
R97	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	B	65.4/36
R98	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	B	58.2/41.7
R102	7030003860	S.RES ERJ3GE JPW V	B	104.5/64
R119	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	88.1/45.2
R120	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	88.1/44
R121	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	88.1/42.8
R122	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	91.8/45.2
R123	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	90.5/47.2
R126	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	120.7/56.1
R127	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	119.5/56.1
C1	4510008540	S.ELE EEE1CA100SR	B	94.7/42.1
C2	4030016930	S.CER ECJ0EB1A104K	B	100.2/41.5
C5	4030017460	S.CER ECJ0EB1E102K	B	138.3/40.4
C6	4030017730	S.CER ECJ0EB1E471K	B	138.3/37.6
C15	4030016790	S.CER ECJ0EB1C103K	B	100.5/57.4
C16	4030016790	S.CER ECJ0EB1C103K	B	61.1/19.6
C21	4030011600	S.CER C1608 JB 1E 104K-T	B	75.6/38.9
C31	4030016790	S.CER ECJ0EB1C103K	B	123/27.3
C32	4030016930	S.CER ECJ0EB1A104K	B	123/28.3
C33	4030016930	S.CER ECJ0EB1A104K	B	124.3/32.7
C35	4030016790	S.CER ECJ0EB1C103K	B	100.5/58.3
C36	4030016790	S.CER ECJ0EB1C103K	B	101.9/60.9
C37	4030016790	S.CER ECJ0EB1C103K	B	102.8/60.9
C38	4030016790	S.CER ECJ0EB1C103K	B	103.7/60.9
C39	4030016790	S.CER ECJ0EB1C103K	B	104.6/60.9
C40	4030016790	S.CER ECJ0EB1C103K	B	105/62.9
C41	4030017480	S.CER C1608 JB 1A 474K-T	B	107.2/64
C42	4030017480	S.CER C1608 JB 1A 474K-T	B	134.4/59.4
C44	4030017030	S.CER ECJ0EB1A273K	B	137.4/63.3
C45	4030017400	S.CER ECJ0EC1H220J	B	115.6/61
C46	4030017400	S.CER ECJ0EC1H220J	B	117.4/61
C52	4030017460	S.CER ECJ0EB1E102K	B	139.3/73.9
C81	4030017920	S.CER ECJ0EB1A683K	B	59.5/54
C82	4030016790	S.CER ECJ0EB1C103K	B	59.3/43.2
C83	4030016930	S.CER ECJ0EB1A104K	B	59.3/41.4
C86	4030016930	S.CER ECJ0EB1A104K	B	64.8/52.1
C87	4030017460	S.CER ECJ0EB1E102K	B	65.2/50.4
C88	4030017460	S.CER ECJ0EB1E102K	B	56.8/58
C89	4030017460	S.CER ECJ0EB1E102K	B	59.5/54.9
C90	4030017460	S.CER ECJ0EB1E102K	B	63.5/56.9
C91	4550007750	S.TAN TEESVA 1V 225M8R	B	80.6/55
C92	4550007750	S.TAN TEESVA 1V 225M8R	B	71.2/68.8
C93	4550007750	S.TAN TEESVA 1V 225M8R	B	71.2/66.6
C94	4550007750	S.TAN TEESVA 1V 225M8R	B	71.2/64.4
C95	4550007650	S.TAN F931V105MAABMA	B	78.5/55
C96	4550007650	S.TAN F931V105MAABMA	B	76.4/55
C97	4550007650	S.TAN F931V105MAABMA	B	74.5/60
C98	4550007650	S.TAN F931V105MAABMA	B	72.3/60
C99	4550007650	S.TAN F931V105MAABMA	B	70.1/60
C101	4030017460	S.CER ECJ0EB1E102K	B	130.9/28.5
C102	4510008540	S.ELE EEE1CA100SR	B	128.9/31.4
C104	4030017460	S.CER ECJ0EB1E102K	B	73.6/29.7
C105	4030017460	S.CER ECJ0EB1E102K	B	74.6/31.1
C106	4030016790	S.CER ECJ0EB1C103K	B	88.4/26.7
C107	4030016790	S.CER ECJ0EB1C103K	B	89/24.8
C108	4030016790	S.CER ECJ0EB1C103K	B	133.1/28.5
C109	4510008540	S.ELE EEE1CA100SR	B	135.1/31.4
C111	4030016930	S.CER ECJ0EB1A104K	B	119.5/58.4
C141	4030016930	S.CER ECJ0EB1A104K	B	59.5/34.6
C142	4030016930	S.CER ECJ0EB1A104K	B	59.5/37.3
C334	4030017420	S.CER ECJ0EC1H470J	B	113.5/12.8
C336	4030017420	S.CER ECJ0EC1H470J	B	112.5/11.3
C337	4030017460	S.CER ECJ0EB1E102K	B	126.2/16.1

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)  
S.=Surface mount

# [LOGIC BOARD]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C338	4030017460	S.CER ECJ0EB1E102K	B	130.8/16.1
C339	4030017460	S.CER ECJ0EB1E102K	B	145/16.4
C340	4030017760	S.CER ECJ0EB1H222K	B	112.5/14.4
C341	4030017730	S.CER ECJ0EB1E471K	B	110.5/14.4
C351	4030016790	S.CER ECJ0EB1C103K	B	82.3/53.4
C352	4510008540	S.ELE EEE1CA100SR	B	115.5/69.9
C353	4510008540	S.ELE EEE1CA100SR	B	110.7/72.1
C354	4030016790	S.CER ECJ0EB1C103K	B	88.3/46.7
C355	4030016930	S.CER ECJ0EB1A104K	B	109.2/75.4
C356	4030016930	S.CER ECJ0EB1A104K	B	106/73.4
J1	6510025180	S.CNR IMSA-9639S-40D-TB	B	93/32.8
J2	6510025170	S.CNR IMSA-9631S-27B-TB	B	86/62.8
J3	6510021291	S.CNR S10B-ZR-SM4A-TF (LF) (SN)	B	59.5/12
J4	6510019121	S.CNR S8B-PH-SM4-TB (LF) (SN)	B	124.5/9
J5	6510018971	S.CNR B4B-PH-SM4-TB (LF) (SN)	B	61/62.3
J6	6510021601	S.CNR S2B-PH-SM4-TB (LF) (SN)	B	142.5/9
DS1	5030002390	LCD HLM7784-010100		
DS2	5040002310	S.LED SML-311YTT86	T	57.2/11.5
DS3	5040002310	S.LED SML-311YTT86	T	23.3/14.3
DS4	5040002310	S.LED SML-311YTT86	B	40.4/19.8
DS5	5040002310	S.LED SML-311YTT86	T	131/13.1
DS6	5040002310	S.LED SML-311YTT86	T	139.4/34.9
DS7	5040002310	S.LED SML-311YTT86	T	139.9/59.8
DS11	5040002660	S.LED FY1101F-TR (LED)	T	116/23
DS12	5040002660	S.LED FY1101F-TR (LED)	T	104/23
DS13	5040002660	S.LED FY1101F-TR (LED)	T	92/23
DS14	5040002660	S.LED FY1101F-TR (LED)	T	80/23
DS15	5040002660	S.LED FY1101F-TR (LED)	T	68/23
DS16	5040002660	S.LED FY1101F-TR (LED)	T	56/23
DS17	5040002660	S.LED FY1101F-TR (LED)	T	56/74.6
DS18	5040002660	S.LED FY1101F-TR (LED)	T	68/74.6
DS19	5040002660	S.LED FY1101F-TR (LED)	T	80/74.6
DS20	5040002660	S.LED FY1101F-TR (LED)	T	92/74.6
DS21	5040002660	S.LED FY1101F-TR (LED)	T	104/74.6
DS22	5040002660	S.LED FY1101F-TR (LED)	T	116/74.6
EP81	6910012350	S.BEA MMZ1608Y 102BT	B	58/57.7

# [MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
IC1	1130007610	S.IC uPD3140GS-E1 (DS8)	T	100.3/26.3
IC2	1110003201	S.IC TA31136FNG (EL)	T	108.7/11.1
IC3	1150002170	IC S-AV35 (I)		
IC14	1110003201	S.IC TA31136FNG (EL)	T	101.5/51.4
Q1	1530003900	S.TR KTC4075 BL-RTK/P	T	91.7/43.1
Q2	1590003580	S.TR KRC404 RTK/P	T	88.3/41.6
Q3	1530003950	S.TR KTC4080 Y-RTK/P	T	73.1/35.1
Q4	1530002920	S.TR 2SC4226-T1 R25	T	73.8/27.5
Q5	1530002920	S.TR 2SC4226-T1 R25	T	78/27.9
Q6	1530003950	S.TR KTC4080 Y-RTK/P	T	71.3/31
Q7	1530003950	S.TR KTC4080 Y-RTK/P	T	64.7/33.3
Q10	1530002920	S.TR 2SC4226-T1 R25	T	76.1/56
Q14	1510001090	S.TR KTA2015Y-RTK/P	T	60.7/50.9
Q15	1590000670	S.TR FMW1 T148	T	56/48.8
Q16	1590003580	S.TR KRC404 RTK/P	T	56.1/40.2
Q17	1590003680	S.TR KRC402 RTK/P	T	52.1/44.1
Q21	1580000700	S.FET 3SK292 (TE85R)	T	5.3/14.6
Q22	1560000990	S.FET PMBFJ310	T	65.8/7.3
Q23	1560000990	S.FET PMBFJ310	T	65.8/4.1
Q24	1530003890	S.TR KTC3880S Y-RTK/P	T	101.8/4.1
Q52	1590003580	S.TR KRC404 RTK/P	T	60.4/42.3
Q54	1530003900	S.TR KTC4075 BL-RTK/P	T	35.6/28.7
Q55	1520000651	S.TR 2SB1201S-TL-E	T	28.8/30.3
Q57	1510001090	S.TR KTA2015Y-RTK/P	T	62/47.8
Q58	1560000990	S.FET PMBFJ310	T	46/33.7
Q59	1560000990	S.FET PMBFJ310	T	46/30.5
Q61	1580000700	S.FET 3SK292 (TE85R)	T	16/31.2
Q63	1530003890	S.TR KTC3880S Y-RTK/P	T	92.2/51.4
Q64	1530003950	S.TR KTC4080 Y-RTK/P	T	102/34.7
Q71	1530003900	S.TR KTC4075 BL-RTK/P	T	70.8/16.9
Q72	1560000990	S.FET PMBFJ310	T	82.6/9.7
Q74	1530003950	S.TR KTC4080 Y-RTK/P	T	80.3/15.3
Q75	1530003950	S.TR KTC4080 Y-RTK/P	T	84/19
Q76	1530003950	S.TR KTC4080 Y-RTK/P	T	55.1/14
D1	1790000620	S.DIO MA77 (TX)	T	84.1/36.6
D2	1790000620	S.DIO MA77 (TX)	T	81.8/34.3
D3	1750000711	S.VCP HVC350BTRF-E	T	80.7/30.2
D7	1790000620	S.DIO MA77 (TX)	T	60.4/36.3

# [MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
D8	1790000620	S.DIO MA77 (TX)	T	58.3/32.3
D12	1790000691	S.DIO HSM88ASRTR-E	T	49.9/49.8
D13	1790000691	S.DIO HSM88ASRTR-E	T	42.4/42.5
D14	1710001081	DIO L308CCB		
D21	1710001081	DIO L308CCB		
D22	1790000620	S.DIO MA77 (TX)	T	18.7/32.4
D26	1750001190	S.VCP KDV214E RTK/P	T	14.8/12.2
D27	1750001190	S.VCP KDV214E RTK/P	T	17.6/13.8
D28	1750001190	S.VCP KDV214E RTK/P	T	14.8/13.5
D29	1750001190	S.VCP KDV214E RTK/P	T	17.6/12.5
D30	1750001190	S.VCP KDV214E RTK/P	T	19.6/11.3
D31	1750001190	S.VCP KDV214E RTK/P	T	28.2/11.3
D32	1750000431	S.DIO HSB88WSTR-E	T	42.5/6.6
D35	1790001330	S.ZEN MA8036-L (TX)	T	100.8/8.4
D39	1750000431	S.DIO HSB88WSTR-E	T	42.5/21.5
D41	1790001330	S.ZEN MA8036-L (TX)	T	102/44.1
D51	1720000811	S.VCP HVC358BTRF-E	T	86.5/8.9
D52	1720000811	S.VCP HVC358BTRF-E	T	86.5/10.3
FI1	2030000350	MLH 21R15AB (FL-368)		
FI2	2030000480	MLH 21R15AB (FL-399)		
FI3	2020002250	CER LT450EW		
FI4	2030000380	MLH 31M15B5 (FL-372)		
FI6	2020002250	CER LT450EW		
X1	6050012370	S.XTL CR-827 (15.3 MHz)	T	91.6/30.1
X2	6070000290	DCR JTB450C24		
X3	6050012120	S.XTL CR-804 (21.250 MHz)	T	112.9/4.7
X4	6070000290	DCR JTB450C24		
L1	6200009560	S.COL MLG1608B R10J-T	T	76/35.6
L2	6200010840	S.COL MLG1608B 56NJ-T	T	76.5/33.5
L3	6200003091	S.COL NLV32T-2R7J	T	85.6/27.3
L4	6200008190	S.COL 0.25-1.9-8TL 80N	T	82.3/26.8
L6	6200009560	S.COL MLG1608B R10J-T	T	70.4/35.2
L7	6200009560	S.COL MLG1608B R10J-T	T	62.4/33.9
L12	6200002601	S.COL NLV25T-047J	T	49.4/14.2
L15	6200009620	S.COL MLG1608B 68NJ-T	T	72.5/56.9
L17	6200009680	S.COL MLG1608B 47NJ-T	T	76.7/58.9
L19	6110001670	COL LA-253		
L20	6170000230	COL LW-25		
L21	6110001600	COL LA-243		
L22	6110001600	COL LA-243		
L31	6110001600	COL LA-243		
L32	6200007360	S.COL ELJND R47J	T	18.8/35
L35	6150003821	COL LS-440-LF		
L36	6150003821	COL LS-440-LF		
L37	6200007360	S.COL ELJND R47J	T	12.6/14.5
L38	6150003821	COL LS-440-LF		
L39	6150003821	COL LS-440-LF		
L40	6130003000	S.COL #617DB-1714=P3	T	37.1/5.6
L41	6130003000	S.COL #617DB-1714=P3	T	48.9/5.6
L42	6200010440	S.COL C2520C-1R2G-A (1.2U)	T	57.9/8.5
L43	6200003141	S.COL NLV32T-150J	T	57.7/5.4
L45	6200003071	S.COL NLV32T-1R5J	T	69.6/3.9
L55	6130003000	S.COL #617DB-1714=P3	T	37.1/21.5
L56	6130003000	S.COL #617DB-1714=P3	T	48.9/21.5
L57	6200003141	S.COL NLV32T-150J	T	53.5/28.4
L58	6200003031	S.COL NLV32T-R47J	T	53.5/36.9
L61	6150003821	COL LS-440-LF		
L62	6150003821	COL LS-440-LF		
L63	6150003821	COL LS-440-LF		
L64	6200010770	S.COL C2520C-R68G-A	T	53.3/31.5
L65	6200002601	S.COL NLV25T-047J	T	58/20.9
L67	6200001981	S.COL NLV25T-1R0J	T	101.3/38.1
L68	6200001981	S.COL NLV25T-1R0J	T	104.3/39.4
L70	6200003101	S.COL NLV32T-3R9J	T	89.9/5.5
L71	6200008280	S.COL 0.30-1.7-TTL 50N	T	87.2/13
L72	6200003101	S.COL NLV32T-3R9J	T	77.6/11.6
L73	6200009560	S.COL MLG1608B R10J-T	T	84.3/16.7
L74	6200009560	S.COL MLG1608B R10J-T	T	81.4/19.6
L75	6200006991	S.COL ELJRE 56NGFA	T	87.9/19.9
L76	6200009560	S.COL MLG1608B R10J-T	T	55.1/15.9
R1	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	107.3/32.8
R2	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	107.3/31.5
R3	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	107.3/30.2
R4	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	107.3/34.1
R6	7030003380	S.RES ERJ3GEYJ 331 V (330)	T	104.8/24.5
R7	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	95.2/33.4
R8	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	92.2/34.9
R9	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	92.2/37.4
R10	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	92.2/38.7
R11	7030003380	S.RES ERJ3GEYJ 331 V (330)	T	95.2/27.2
R21	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	92/41.2
R22	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	91.6/45
R23	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	87.8/43.7

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)  
S.=Surface mount



[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R24	7030003410	S.RES ERJ3GEYJ 561 V (560)	T	84.1/42.7
R25	7030003420	S.RES ERJ3GEYJ 681 V (680)	T	85.4/43.2
R26	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	74.2/40.7
R27	7030003600	S.RES ERJ3GEYJ 223 V (22 k)	T	70.5/42.4
R28	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	74.2/42.4
R31	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	76/37
R32	7030003660	S.RES ERJ3GEYJ 683 V (68 k)	T	73.1/37
R33	7030003370	S.RES ERJ3GEYJ 271 V (270)	T	78.5/32
R34	7030003230	S.RES ERJ3GEYJ 180 V (18)	T	78.7/34.3
R35	7030003370	S.RES ERJ3GEYJ 271 V (270)	T	79.8/36.2
R41	7030003410	S.RES ERJ3GEYJ 561 V (560)	T	86.3/31.7
R42	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	T	71.7/26.6
R43	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	T	77.9/26
R44	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	73.9/31.6
R45	7030003390	S.RES ERJ3GEYJ 391 V (390)	T	73.9/29.8
R46	7030003350	S.RES ERJ3GEYJ 181 V (180)	T	75.9/26.6
R51	7030003420	S.RES ERJ3GEYJ 681 V (680)	T	71.1/33.1
R52	7030003660	S.RES ERJ3GEYJ 683 V (68 k)	T	69.4/30.9
R55	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	63.8/37.4
R56	7030003600	S.RES ERJ3GEYJ 223 V (22 k)	T	64.6/35.2
R66	7030003860	S.RES ERJ3GE JPW V	T	58.8/23.5
R70	7030003860	S.RES ERJ3GE JPW V	T	52/15.5
R81	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	60/34.7
R83	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	69.8/53.5
R84	7030003390	S.RES ERJ3GEYJ 391 V (390)	T	73/52.7
R86	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	69.8/54.7
R87	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	T	74.2/54.2
R88	7030003340	S.RES ERJ3GEYJ 151 V (150)	T	78/54.1
R89	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	69.8/56.9
R100	7030003720	S.RES ERJ3GEYJ 224 V (220 k)	T	58.8/50.7
R101	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	64.8/57.7
R104	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	60/48
R105	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	55.3/46.4
R106	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	56.1/42.6
R107	7030003360	S.RES ERJ3GEYJ 221 V (220)	T	53.6/49.2
R108	7030003240	S.RES ERJ3GEYJ 220 V (22)	T	58.1/41.8
R111	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	49.1/46.6
R112	7310005270	S.TRI RH03ADCJ2X (220)	T	46.4/44.1
R113	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k)	T	49.1/42.9
R114	7030003270	S.RES ERJ3GEYJ 390 V (39)	T	51.1/42.2
R121	7030003470	S.RES ERJ3GEYJ 182 V (1.8 k)	T	49.9/54.9
R122	7030003470	S.RES ERJ3GEYJ 182 V (1.8 k)	T	49.9/53.6
R123	7030003470	S.RES ERJ3GEYJ 182 V (1.8 k)	T	43.7/45.6
R124	7030003470	S.RES ERJ3GEYJ 182 V (1.8 k)	T	42.4/45.6
R125	7030007240	S.RES ERJ12YJ680U (68)	T	34.9/38.3
R126	7030003670	S.RES ERJ3GEYJ 823 V (82 k)	T	27.4/58.7
R127	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	48.2/40.9
R144	7030003860	S.RES ERJ3GE JPW V	T	11.8/30.2
R147	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	5.6/11.2
R148	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	4.4/11.4
R149	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	T	3.1/17.7
R150	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	3.1/11.4
R151	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	2/14.1
R152	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	5.8/17.7
R153	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	8.4/14.3
R154	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	6.8/11.2
R157	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	17.6/15.2
R158	7030003270	S.RES ERJ3GEYJ 390 V (39)	T	15.6/35.4
R159	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	21.2/34
R171	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	21.5/12.3
R172	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	26.3/12.3
R173	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	32.9/14.4
R180	7030003860	S.RES ERJ3GE JPW V	T	33.8/11.5
R182	7030003240	S.RES ERJ3GEYJ 220 V (22)	T	60.6/6.5
R183	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	64/12
R185	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	72.6/3.9
R186	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	96.2/2.2
R187	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	63.3/14
R201	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	97.8/8.4
R202	7030003380	S.RES ERJ3GEYJ 331 V (330)	T	99.8/5.9
R203	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	99.4/3.9
R205	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k)	T	102.3/12.6
R206	7030003420	S.RES ERJ3GEYJ 681 V (680)	T	98.9/12.6
R209	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	114.3/9.3
R210	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	111.6/7.5
R211	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	114.3/13.1
R212	7030003430	S.RES ERJ3GEYJ 821 V (820)	T	109.4/20.5
R213	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	112.9/20.7
R214	7310005040	S.TRI RH03ADCJ4X (22 k)	T	113/18
R218	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	T	109/15.5
R219	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	105.7/16.3
R220	7510001511	S.TMR NTCG16 4LH 223JT	T	113.6/22.7
R327	7310005030	S.TRI RH03ADC54X (47 k)	T	120.4/31.6
R328	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	T	80/42
R382	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	62/45.7
R383	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	61.3/44.4
R384	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	35.5/31.9
R385	7030003660	S.RES ERJ3GEYJ 152 V (1.5 k)	T	35/30.6
R386	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	107.8/43
R498	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	14.1/26.9
R499	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	T	13.1/29.5

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R501	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	15.4/27.9
R502	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	12.7/32.5
R504	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	12.7/34.3
R505	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	18/27.5
R506	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	16.7/27.9
R507	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	19.6/30.1
R521	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	46.9/37.7
R522	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	51.3/36.1
R523	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	56.4/38.3
R524	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	87.8/51.7
R531	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	91.9/47
R532	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	89.9/50.2
R533	7030003380	S.RES ERJ3GEYJ 331 V (330)	T	94.1/49.1
R534	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	57.2/23.5
R541	7030003420	S.RES ERJ3GEYJ 681 V (680)	T	100.1/43.6
R542	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k)	T	106.4/59.2
R544	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	98.9/47.3
R551	7030003240	S.RES ERJ3GEYJ 220 V (22)	T	50.6/29.4
R561	7030003540	S.RES ERJ3GEYJ 682 V (6.8 k)	T	100.1/40.8
R562	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	100.1/34.4
R563	7030003340	S.RES ERJ3GEYJ 151 V (150)	T	106.6/50.2
R602	7030003450	S.RES ERJ3GEYJ 122 V (1.2 k)	T	102.4/20.1
R603	7030003490	S.RES ERJ3GEYJ 272 V (2.7 k)	T	92.9/15.3
R606	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	91.5/13.3
R608	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	68.6/17.9
R609	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	71.9/15
R610	7030003530	S.RES ERJ3GEYJ 562 V (5.6 k)	T	72.6/13
R611	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	84.1/12.2
R615	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	77.5/8.8
R616	7030003420	S.RES ERJ3GEYJ 681 V (680)	T	85/14.7
R617	7030003660	S.RES ERJ3GEYJ 683 V (68 k)	T	82.9/15.3
R621	7030003660	S.RES ERJ3GEYJ 683 V (68 k)	T	80.3/18
R622	7030003380	S.RES ERJ3GEYJ 331 V (330)	T	78.7/19.9
R623	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	89.9/19.1
R624	7030003300	S.RES ERJ3GEYJ 680 V (68)	T	91.9/18.6
R625	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	93.9/17.8
R631	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	59.4/14.7
R632	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	57.4/15.4
R633	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	55.7/12.1
R634	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	58.5/12.1
R635	7030003360	S.RES ERJ3GEYJ 221 V (220)	T	58/13.4
C1	4030016970	S.CER ECJ0EB1C223K	T	106.8/27.7
C2	4030016790	S.CER ECJ0EB1C103K	T	99.2/21
C3	4030016930	S.CER ECJ0EB1A104K	T	96/23.8
C4	4550000510	S.TAN TEESVA 1V 473M8R	T	96.3/35.2
C5	4550007390	S.TAN F931C225MAABMA	T	96.3/37.4
C7	4030017460	S.CER ECJ0EB1E102K	T	98/32.9
C11	4030017640	S.CER ECJ0EC1H150J	T	94.7/28.3
C12	4610001590	S.TRI TZC3R100A110R00	T	92.4/24.7
C13	4030017390	S.CER ECJ0EC1H1R75B	T	94.3/29.6
C20	4030017460	S.CER ECJ0EB1E102K	T	97.8/45.2
C21	4510008540	S.ELE EEE1CA1005FR	T	95.7/43.6
C22	4030016790	S.CER ECJ0EB1C103K	T	90.5/39.9
C23	4030017460	S.CER ECJ0EB1E102K	T	89.7/43.4
C24	4030017730	S.CER ECJ0EB1E471K	T	85.5/41
C26	4030016790	S.CER ECJ0EB1C103K	T	72.3/42
C27	4030017490	S.CER C1608 JB 1A 105K-T	T	77.2/42.4
C29	4030017460	S.CER ECJ0EB1E102K	T	81.8/32
C30	4030017460	S.CER ECJ0EB1E102K	T	86.5/42.2
C31	4030017730	S.CER ECJ0EB1E471K	T	78.3/35.6
C32	4030017380	S.CER ECJ0EC1H050B	T	70.8/37.1
C33	4030017640	S.CER ECJ0EC1H150J	T	74.8/34.1
C34	4030017650	S.CER ECJ0EC1H270J	T	75/33.1
C35	4030017650	S.CER ECJ0EC1H270J	T	78/33.2
C36	4030017460	S.CER ECJ0EB1E102K	T	79.8/33.1
C40	4030017600	S.CER ECJ0EC1H080C	T	80.3/29
C41	4030017660	S.CER ECJ0EC1H330J	T	82.9/30.9
C42	4030017700	S.CER ECJ0EC1H151J	T	83.6/29.6
C43	4550007590	S.TAN F931V474MAABMA	T	84.6/33.1
C44	4030017460	S.CER ECJ0EB1E102K	T	85.2/29.9
C45	4030017550	S.CER ECJ0EC1H1R5B	T	78.6/29.7
C46	4030017550	S.CER ECJ0EC1H1R5B	T	79.9/27.7
C47	4030017460	S.CER ECJ0EB1E102K	T	74.3/25.7
C48	4030017730	S.CER ECJ0EB1E471K	T	75.8/28.8
C49	4030017730	S.CER ECJ0EB1E471K	T	76/30.7
C51	4030017540	S.CER ECJ0EC1H1R75B	T	72/28.6
C52	4030017730	S.CER ECJ0EB1E471K	T	69.1/33.2
C55	4030017460	S.CER ECJ0EB1E102K	T	65.3/38.4
C56	4030017640	S.CER ECJ0EC1H150J	T	69.1/35.5
C57	4030017730	S.CER ECJ0EB1E471K	T	65.3/37.4
C58	4030017640	S.CER ECJ0EC1H1R5B	T	60.7/33.5
C78	4030017660	S.CER ECJ0EC1H330J	T	51.4/12.5
C79	4030017460	S.CER ECJ0EB1E102K	T	48/11.8
C81	4030017460	S.CER ECJ0EB1E102K	T	69.4/52.4
C82	4030017460	S.CER ECJ0EB1E102K	T	74.2/51.9
C83	4030017700	S.CER ECJ0EC1H151J	T	72/54.9
C87	4030017420	S.CER ECJ0EC1H470J	T	76.8/53.6
C88	4030017460	S.CER ECJ0EB1E102K	T	75.8/53.6
C89	4030017460	S.CER ECJ0EB1E102K	T	70.3/55.8

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)  
S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C91	4030017620	S.CER ECJ0EC1H100C	T	78/56.7
C92	4030017620	S.CER ECJ0EC1H100C	T	78/58.6
C100	4550007520	S.TAN F931A106MAABMA	T	65.6/49.2
C105	4030017460	S.CER ECJ0EB1E102K	T	64.3/56.2
C111	4030017730	S.CER ECJ0EB1E471K	T	57.2/59.8
C113	4030017460	S.CER ECJ0EB1E102K	T	55.4/59.8
C118	4510008570	S.ELE EEE1CA220SR	T	55.4/56
C119	4030016790	S.CER ECJ0EB1C103K	T	54.1/44.8
C120	4550007520	S.TAN F931A106MAABMA	T	57.3/44.3
C121	4010008070	CER HM60SJ CH 220J 500V		
C122	4030006860	S.CER C1608 JB 1H 102K-T	T	49.9/52.2
C123	4030006860	S.CER C1608 JB 1H 102K-T	T	41.1/45.6
C124	4010005430	CER HM60SJ CH 050C 500V		
C125	4030017460	S.CER ECJ0EB1E102K	T	37.4/40.3
C126	4010005790	CER HM60SJ YB 102K 500V		
C127	4010005500	CER HM60SJ CH 150J 500V		
C128	4010005420	CER HM60SJ CH 040C 500V		
C129	4010007630	CER HM60SJ CH 270J 500V		
C133	4030017460	S.CER ECJ0EB1E102K	T	63.1/49.6
C134	4030017460	S.CER ECJ0EB1E102K	T	50.6/47.6
C136	4030017460	S.CER ECJ0EB1E102K	T	52.3/46.1
C137	4030017730	S.CER ECJ0EB1E471K	T	54.1/42.8
C138	4030017460	S.CER ECJ0EB1E102K	T	41.9/40.3
C139	4030017460	S.CER ECJ0EB1E102K	T	45/40.9
C140	4030017460	S.CER ECJ0EB1E102K	T	49.2/39.8
C142	4010008080	CER HM60SJ CH 300J 500V		
C143	4010008050	CER HM60SJ CH 180J 500V		
C145	4030006860	S.CER C1608 JB 1H 102K-T	T	13.6/36.4
C146	4030017460	S.CER ECJ0EB1E102K	T	20.1/33.1
C150	4030006860	S.CER C1608 JB 1H 102K-T	T	10.5/33.1
C151	4030017640	S.CER ECJ0EC1H150J	T	9.3/27.1
C152	4030017580	S.CER ECJ0EC1H060C	T	9.3/28.1
C153	4030017440	S.CER ECJ0EC1H221J	T	4.3/18.5
C156	4030011600	S.CER C1608 JB 1E 104K-T	T	8.8/11.4
C157	4030016790	S.CER ECJ0EB1C103K	T	8.8/10.3
C158	4030016930	S.CER ECJ0EB1A104K	T	3.1/13.8
C159	4030017460	S.CER ECJ0EB1E102K	T	7.3/16.7
C160	4030016930	S.CER ECJ0EB1A104K	T	7.3/17.7
C161	4030017370	S.CER ECJ0EC1H3R5B	T	16/10.6
C162	4030017600	S.CER ECJ0EC1H080C	T	14.1/10.6
C163	4030017460	S.CER ECJ0EB1E102K	T	19.4/14.1
C164	4030017370	S.CER ECJ0EC1H3R5B	T	10.1/12.6
C165	4030017460	S.CER ECJ0EB1E102K	T	11/11.4
C166	4030017460	S.CER ECJ0EB1E102K	T	20.4/12.9
C173	4030017630	S.CER ECJ0EC1H120J	T	23/12.4
C174	4030017560	S.CER ECJ0EC1H2R5B	T	21.7/10.5
C175	4030017530	S.CER ECJ0EC1H0R5B	T	23/11.5
C176	4030017360	S.CER ECJ0EC1H030B	T	24.8/11.5
C177	4030017370	S.CER ECJ0EC1H3R5B	T	26.1/10.5
C178	4030017600	S.CER ECJ0EC1H080C	T	24.8/12.4
C179	4030016790	S.CER ECJ0EB1C103K	T	28.4/12.8
C180	4030017730	S.CER ECJ0EB1E471K	T	61/19.3
C181	4030017600	S.CER ECJ0EC1H080C	T	31.5/11.5
C184	4030016790	S.CER ECJ0EB1C103K	T	62.1/15.3
C185	4030017660	S.CER ECJ0EC1H330J	T	63.9/9.8
C186	4030017580	S.CER ECJ0EC1H060C	T	63.9/10.8
C187	4030016790	S.CER ECJ0EB1C103K	T	62.1/13.5
C188	4030017460	S.CER ECJ0EB1E102K	T	64.5/13.5
C190	4030017350	S.CER ECJ0EC1H020B	T	44.9/5.6
C191	4030016790	S.CER ECJ0EB1C103K	T	63.6/4.7
C193	4030017550	S.CER ECJ0EC1H1R5B	T	84.4/5
C195	4030017460	S.CER ECJ0EB1E102K	T	94/2.2
C196	4030017340	S.CER ECJ0EC1H010B	T	30.6/10.4
C202	4030016970	S.CER ECJ0EB1C223K	T	97.9/6.2
C203	4030017460	S.CER ECJ0EB1E102K	T	99.2/7
C204	4030016790	S.CER ECJ0EB1C103K	T	103.3/6
C205	4030017430	S.CER ECJ0EC1H101J	T	104.2/12.4
C206	4030017620	S.CER ECJ0EC1H100C	T	114.2/7.8
C207	4030017620	S.CER ECJ0EC1H100C	T	115.2/7.8
C208	4510008540	S.ELE EEE1CA100SR	T	106.5/4.7
C209	4030016790	S.CER ECJ0EB1C103K	T	109.3/7.8
C211	4030017450	S.CER ECJ0EB1E271K	T	112/14.4
C212	4030017450	S.CER ECJ0EB1E271K	T	114.8/14.4
C213	4030017460	S.CER ECJ0EB1E102K	T	114/10.9
C215	4030016930	S.CER ECJ0EB1A104K	T	99.2/9.9
C216	4030016930	S.CER ECJ0EB1A104K	T	110/14.4
C217	4030017400	S.CER ECJ0EC1H220J	T	114.8/21.1
C218	4030016930	S.CER ECJ0EB1A104K	T	107.2/16.6
C219	4030017460	S.CER ECJ0EB1E102K	T	107.2/18.4
C220	4030017460	S.CER ECJ0EB1E102K	T	106.2/14.4
C221	4030011810	S.CER C1608 JB 1A 224K-T	T	102.9/10.5
C222	4030011600	S.CER C1608 JB 1E 104K-T	T	104.1/9.7
C223	4030016930	S.CER ECJ0EB1A104K	T	111.7/26.1
C367	4030017460	S.CER ECJ0EB1E102K	T	67.3/55.4
C368	4030017420	S.CER ECJ0EC1H470J	T	67.3/56.4
C373	4030017400	S.CER ECJ0EC1H220J	T	88/54.4
C374	4030017400	S.CER ECJ0EC1H220J	T	86.9/54.4
C375	4030017430	S.CER ECJ0EC1H101J	T	87/58.6
C376	4030017730	S.CER ECJ0EB1E471K	T	88/58.6
C379	4030017430	S.CER ECJ0EC1H101J	T	80.1/57.9
C380	4030017730	S.CER ECJ0EB1E471K	T	80.1/57

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C390	4030016930	S.CER ECJ0EB1A104K	T	34.5/33.2
C391	4030017460	S.CER ECJ0EB1E102K	T	107.7/41.8
C392	4510008540	S.ELE EEE1CA100SR	T	40.2/29.4
C393	4510008540	S.ELE EEE1CA100SR	T	64.9/18.3
C401	4030017460	S.CER ECJ0EB1E102K	T	37.3/35.3
C402	4510008540	S.ELE EEE1CA100SR	T	41.4/37.4
C501	4030011600	S.CER C1608 JB 1E 104K-T	T	20.2/27.7
C502	4030016930	S.CER ECJ0EB1A104K	T	13.4/31.4
C503	4030017440	S.CER ECJ0EC1H221J	T	12.5/27.6
C504	4030017460	S.CER ECJ0EB1E102K	T	19.1/27.9
C505	4030017460	S.CER ECJ0EB1E102K	T	16.2/33.9
C506	4030016930	S.CER ECJ0EB1A104K	T	14.9/33.5
C510	4030017590	S.CER ECJ0EC1H070C	T	10.6/26
C511	4030017370	S.CER ECJ0EC1H3R5B	T	16.6/26
C512	4030017590	S.CER ECJ0EC1H070C	T	21.5/26.1
C514	4030017460	S.CER ECJ0EB1E102K	T	23.2/26
C515	4030017530	S.CER ECJ0EC1H0R5B	T	25/26
C516	4030017600	S.CER ECJ0EC1H080C	T	26.8/26.1
C517	4030017350	S.CER ECJ0EC1H020B	T	29.8/26.1
C520	4030017360	S.CER ECJ0EC1H030B	T	49.7/35.7
C521	4030017460	S.CER ECJ0EB1E102K	T	45.9/36.2
C522	4030017400	S.CER ECJ0EC1H220J	T	48.8/35.7
C523	4030016970	S.CER ECJ0EB1C223K	T	47.9/36.2
C524	4030017460	S.CER ECJ0EB1E102K	T	46.9/36.2
C527	4030017620	S.CER ECJ0EC1H100C	T	78.3/45.9
C529	4030017460	S.CER ECJ0EB1E102K	T	86.9/49.7
C531	4030016970	S.CER ECJ0EB1C223K	T	91.7/49
C532	4030017460	S.CER ECJ0EB1E102K	T	93/48.2
C533	4030016790	S.CER ECJ0EB1C103K	T	96.4/48.3
C534	4030017460	S.CER ECJ0EB1E102K	T	55.6/24.5
C535	4030017460	S.CER ECJ0EB1E102K	T	55.8/20.5
C537	4030017640	S.CER ECJ0EC1H150J	T	57.1/19.1
C539	4030017460	S.CER ECJ0EB1E102K	T	90.7/46.6
C541	4030017430	S.CER ECJ0EC1H101J	T	97/52.9
C542	4510008540	S.ELE EEE1CA100SR	T	105.8/46.1
C543	4030016790	S.CER ECJ0EB1C103K	T	102.7/48.1
C544	4030017460	S.CER ECJ0EB1E102K	T	101.8/47.2
C546	4030016930	S.CER ECJ0EB1A104K	T	104.2/55.2
C547	4030016930	S.CER ECJ0EB1A104K	T	106/53.3
C548	4030017460	S.CER ECJ0EB1E102K	T	99.9/45.5
C550	4030017460	S.CER ECJ0EB1E102K	T	97.8/47.5
C551	4030011810	S.CER C1608 JB 1A 224K-T	T	95.4/50.8
C552	4030011810	S.CER C1608 JB 1A 224K-T	T	96.7/50.2
C555	4030017350	S.CER ECJ0EC1H020B	T	34.2/26.9
C557	4030017600	S.CER ECJ0EC1H080C	T	31.5/26.7
C558	4030017350	S.CER ECJ0EC1H020B	T	44.9/21.5
C559	4030016790	S.CER ECJ0EB1C103K	T	46.5/27.9
C561	4030016790	S.CER ECJ0EB1C103K	T	100.4/36.3
C562	4030017380	S.CER ECJ0EC1H050B	T	99.4/32.1
C563	4030017390	S.CER ECJ0EC1H180J	T	104/37.1
C564	4030017360	S.CER ECJ0EC1H030B	T	102.3/40.3
C565	4030017390	S.CER ECJ0EC1H180J	T	106.1/40.3
C566	4030017620	S.CER ECJ0EC1H100C	T	103.4/42
C600	4510008540	S.ELE EEE1CA100SR	T	68.1/13.4
C601	4030011810	S.CER C1608 JB 1A 224K-T	T	71.3/13
C602	4550000520	S.TAN TEESVA 1V 683M8R	T	104.6/20.2
C603	4550007390	S.TAN F931C225MAABMA	T	88.9/16
C606	4550000520	S.TAN TEESVA 1V 683M8R	T	93.2/10.7
C607	4030017340	S.CER ECJ0EC1H010B	T	84.8/9.4
C610	4030017460	S.CER ECJ0EB1E102K	T	80.9/12.1
C611	4030011600	S.CER C1608 JB 1E 104K-T	T	81.4/13.2
C612	4030017640	S.CER ECJ0EC1H150J	T	80.4/9
C613	4030017620	S.CER ECJ0EC1H100C	T	80/11.2
C614	4030017640	S.CER ECJ0EC1H150J	T	79.5/9
C615	4030017620	S.CER ECJ0EC1H100C	T	80/10.3
C616	4030017540	S.CER ECJ0EC1HR75B	T	79.6/12.8
C617	4030017460	S.CER ECJ0EB1E102K	T	86.1/17.6
C621	4030017380	S.CER ECJ0EC1H050B	T	82.4/17.4
C622	4030017460	S.CER ECJ0EB1E102K	T	78.1/18.1
C623	4030017400	S.CER ECJ0EC1H220J	T	86/19.4
C624	4030017650	S.CER ECJ0EC1H270J	T	87/18.2
C625	4030017650	S.CER ECJ0EC1H270J	T	88.8/18.4
C626	4030017460	S.CER ECJ0EB1E102K	T	92.4/19.8
C632	4030017460	S.CER ECJ0EB1E102K	T	58.6/17
C633	4030017630	S.CER ECJ0EC1H120J	T	78.5/16
C634	4030017620	S.CER ECJ0EC1H100C	T	52.7/14.4
C635	4030017460	S.CER ECJ0EB1E102K	T	53.8/12.1
C641	4030017460	S.CER ECJ0EB1E102K	T	109.3/40.7
J1	6510025520	CNR IMSA-6065B-04Z097-PT1		
J2	6510025190	S.CNR IMSA-9639S-20Y905	T	113/37
W1	7120000470	JMP ERDS2T0		
W2	7120000470	JMP ERDS2T0		
EP2	6910002161	CAS CASE-BM7H-LF		
EP3	6910002161	CAS CASE-BM7H-LF		

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)  
S.=Surface mount

## [AF UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
IC3	1130011770	S.IC CD4066BPWR	T	35.5/25.5
IC4	1130011770	S.IC CD4066BPWR	T	78.5/24
IC5	1130011770	S.IC CD4066BPWR	T	59/47
IC6	1130011770	S.IC CD4066BPWR	T	70/54.4
IC7	1110000960	S.IC NJM4558M-TE1	B	63.5/41.6
IC8	1110000960	S.IC NJM4558M-TE1	B	63.5/28
IC9	1110003091	IC LA4425A-E		
IC10	1180002780	REG KIA7805API U/P		
IC12	1110006380	S.IC LM2904PWR	T	48.1/40
IC13	1110004490	S.IC M62429FP 700C	B	88.5/44
IC14	1110006141	IC LA4485-E		
IC15	1110003650	S.IC NJM2211M-TE1	B	43/30
IC26	1130013110	S.IC KIC7W53FK-RTK/P	T	40/40.4
IC27	1130011760	S.IC CD4094BPWR	T	46/12.5
IC28	1130011760	S.IC CD4094BPWR	T	46/20.5
IC29	1110002400	S.IC NJM2107F-TE1	T	64.1/37.7
Q31	1530003900	S.TR KTC4075 BL-RTK/P	T	73.6/28.8
Q32	1530003900	S.TR KTC4075 BL-RTK/P	T	71.4/22.2
Q37	1590003670	S.TR KRA304-RTK/P	T	75.7/54.9
Q38	1530003900	S.TR KTC4075 BL-RTK/P	T	44.3/50
Q61	1590003560	S.FET TPC6104 (TE85L F)	T	15.7/24.5
Q62	1590003580	S.TR KRC404 RTK/P	T	17.3/20.1
Q65	1530003960	S.TR KTC2875-B-RTK/P	B	7/37.9
Q66	1590003670	S.TR KRA304-RTK/P	T	93.2/14.9
Q71	1520000380	TR 2SB1143 S		
Q72	1590001190	S.TR XP6501-(TX) AB	T	4.6/20.1
D42	1790000700	DIO DSA3A1		
R231	7030003600	S.RES ERJ3GEYJ 223 V (22 k)	T	69.9/26.6
R232	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	T	70.9/29.7
R233	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	68.7/23.8
R234	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	72/26.6
R235	7030003720	S.RES ERJ3GEYJ 224 V (220 k)	T	73.7/30.9
R236	7030003390	S.RES ERJ3GEYJ 391 V (390)	T	70.9/30.9
R237	7030003490	S.RES ERJ3GEYJ 272 V (2.7 k)	T	74/26.6
R238	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	74/25.3
R239	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	74/24
R240	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	74.3/22.6
R241	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	76.7/18.5
R242	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	77.7/30.6
R243	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	81.6/30.6
R244	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	79.3/18
R245	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	78/18.5
R246	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	76.4/30.6
R247	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	79/30.6
R248	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	58.3/41
R250	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	62.7/53.8
R251	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	57.9/39.6
R252	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	60.3/40.3
R253	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	61.5/42.3
R254	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	61.4/53.8
R255	7030003490	S.RES ERJ3GEYJ 272 V (2.7 k)	T	69.7/33.9
R256	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	59.6/53.8
R257	7030003490	S.RES ERJ3GEYJ 272 V (2.7 k)	T	64.1/43.4
R258	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	58.3/53.8
R259	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	57/53.8
R260	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	83.8/27.8
R261	7030003470	S.RES ERJ3GEYJ 182 V (1.8 k)	T	85.1/27.8
R262	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	70.1/48.5
R263	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	65.8/55.7
R264	7030003420	S.RES ERJ3GEYJ 681 V (680)	T	75.7/53
R265	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	T	73.4/53.5
R266	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	72.7/59.7
R267	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	70.1/59.7
R268	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	71.4/59.7
R269	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	71.3/48.5
R270	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	80.3/30.6
R271	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	T	44.3/46.8
R272	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	41.5/46.8
R273	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	41.6/48.8
R274	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	40.5/51.9
R275	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	44.3/48.1
R276	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	44.3/51.9
R277	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	46.5/49.9
R278	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	80.6/18.5
R292	7030003790	S.RES ERJ3GEYJ 824 V (820 k)	T	81.9/17.1
R293	7030005321	S.RES ERA3YED 103V (10 k)	T	83.2/17.1
R294	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	36.6/35.6
R295	7030006091	S.RES ERA3YED 822V (8.2 k)	T	84.5/15.6
R298	7030003860	S.RES ERJ3GE JPW V	T	40.1/29.4
R299	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	68.9/37.9
R301	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	70.6/42.4
R302	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	69/44.4
R303	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	79.1/39.4
R303	7030003540	S.RES ERJ3GEYJ 682 V (6.8 k)	T	79.1/39.4
R304	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	B	67.3/37.2
R305	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	59.7/41.3

## [AF UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R306	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	36.1/31.1
R307	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	B	61.1/19.2
R308	7030003770	S.RES ERJ3GEYJ 564 V (560 k)	B	67.3/26.4
R309	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	66.6/22.3
R311	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	B	63/22.1
R312	7030003610	S.RES ERJ3GEYJ 273 V (27 k)	B	67.3/29.5
R313	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	71.1/31
R314	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	B	69.5/29.5
R315	7030003670	S.RES ERJ3GEYJ 823 V (82 k)	B	67.3/32.6
R316	7030003670	S.RES ERJ3GEYJ 823 V (82 k)	B	65.7/34.1
R317	7030003670	S.RES ERJ3GEYJ 823 V (82 k)	B	62.3/34.1
R318	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	59.7/44.4
R319	7030003610	S.RES ERJ3GEYJ 273 V (27 k)	B	67.3/40.6
R320	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	B	63.9/48.2
R321	7030003470	S.RES ERJ3GEYJ 182 V (1.8 k)	B	65.7/47.6
R323	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	33.3/28.4
R324	7510001671	S.TMR NTCG16 4BH 103JT	B	31.4/28.4
R325	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	30.1/31.7
R326	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	B	29.5/28.4
R331	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	37.4/31.1
R332	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	36.5/19.3
R333	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	35.2/19.3
R334	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	40.2/45
R335	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	40.2/43.7
R336	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	39.2/31.4
R337	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	34.8/31.1
R338	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	33.9/19.3
R341	7030003860	S.RES ERJ3GE JPW V	B	68.9/23.3
R343	7030003860	S.RES ERJ3GE JPW V	T	13.9/38.5
R344	7030003860	S.RES ERJ3GE JPW V	T	12.1/37
R353	7030003770	S.RES ERJ3GEYJ 564 V (560 k)	B	7.8/33.6
R354	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	B	6/34.4
R355	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	B	6/42.1
R356	7030000100	S.RES MCR10EZJH 4.7 (4R7)	T	9.2/40.1
R361	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	65.3/40.5
R362	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	67.3/40.6
R363	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	67.8/37.1
R411	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	78.9/44.4
R412	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	B	81.1/43.5
R421	7030003860	S.RES ERJ3GE JPW V	T	87.3/43.4
R423	7030003860	S.RES ERJ3GE JPW V	T	92/50.5
R425	7030003860	S.RES ERJ3GE JPW V	T	79.2/42.2
R427	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	91.1/17.3
R428	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	95.8/23.2
R429	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	90.3/14.3
R431	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	B	9.8/37.8
R441	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	18.1/24.5
R442	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	17.2/22.2
R443	7030000010	S.RES MCR10EZJH JPW (000)	B	96.5/13.7
R444	7030000010	S.RES MCR10EZJH JPW (000)	B	94.1/14.6
R571	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	48.5/44.6
R572	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	49.4/43.3
R573	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	46.5/43.8
R574	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	44.4/43.6
R575	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	44.4/42.3
R576	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	42.5/37.3
R577	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	45.7/37.4
R578	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k)	T	48.6/36.1
R580	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	48.5/37.4
R581	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	51.3/37.4
R582	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	B	43.5/24
R583	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	36.4/33.3
R584	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	40/37.3
R585	7030003630	S.RES ERJ3GEYJ 393 V (39 k)	B	43.2/37.3
R586	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	B	45.6/37.9
R587	7030003470	S.RES ERJ3GEYJ 182 V (1.8 k)	B	48.1/37.5
R591	7030005341	S.RES ERA3YED 332V (3.3 k)	B	6/12.8
R592	7030005321	S.RES ERA3YED 103V (10 k)	B	6/16.4
R593	7030005321	S.RES ERA3YED 103V (10 k)	T	5.8/17.1
R594	7030000320	S.RES MCR10EZJH 330 (331)	T	5.5/13
R595	7030000320	S.RES MCR10EZJH 330 (331)	T	5.5/14.8
R596	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	5.4/23
C106	4030016790	S.CER ECJ0EB1C103K	T	81/7.9
C107	4030016790	S.CER ECJ0EB1C103K	T	58.8/14.7
C231	4030018900	S.CER ECJ0EB0J474K	T	68.8/26.7
C232	4030016930	S.CER ECJ0EB1A104K	T	69/29.9
C233	4030016970	S.CER ECJ0EB1C223K	T	69.6/28.5
C234	4030016970	S.CER ECJ0EB1C223K	T	71.4/28.5
C235	4510008540	S.ELE EEE1CA1005R	T	65/27.3
C236	4030017760	S.CER ECJ0EB1H222K	T	71.9/24.3
C237	4030018820	S.CER ECJ0EB1H561K	T	74.3/21.5
C238	4510008530	S.ELE EEE1HA2R2SR	T	73/18.3
C241	4510008530	S.ELE EEE1HA2R2SR	T	65.1/32.1
C243	4510008530	S.ELE EEE1HA2R2SR	T	83.9/34.7
C245	4030011810	S.CER C1608 JB 1A 224K-T	B	75.5/45.9
C246	4510008530	S.ELE EEE1HA2R2SR	T	79.1/35.7
C247	4030016790	S.CER ECJ0EB1C103K	T	83.7/23.7
C248	4510008530	S.ELE EEE1HA2R2SR	T	65.2/48.9
C249	4030017490	S.CER C1608 JB 1A 105K-T	T	61.4/33
C250	4030017490	S.CER C1608 JB 1A 105K-T	T	64.1/44.7

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)  
S.=Surface mount



## [AF UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C251	4030016790	S.CER ECJ0EB1C103K	T	55.7/50
C260	4030017490	S.CER C1608 JB 1A 105K-T	T	82/27.8
C262	4030017460	S.CER ECJ0EB1E102K	T	66.3/53.4
C263	4510008530	S.ELE EEE1HA2R2SR	T	75.6/49.3
C264	4030011810	S.CER C1608 JB 1A 224K-T	T	73.4/56.4
C265	4510008530	S.ELE EEE1HA2R2SR	T	78.1/58.6
C271	4030016930	S.CER ECJ0EB1A104K	T	43.5/45.7
C272	4030017790	S.CER ECJ0EB1E682K	T	40.5/50.7
C273	4030016790	S.CER ECJ0EB1C103K	T	50.6/45.6
C274	4030016970	S.CER ECJ0EB1C223K	T	42.4/51.6
C275	4030017760	S.CER ECJ0EB1H222K	T	47.6/49.6
C276	4030017790	S.CER ECJ0EB1E682K	T	48.4/48
C291	4510008540	S.ELE EEE1CA100SR	T	86.3/19.5
C292	4030016790	S.CER ECJ0EB1C103K	T	38.2/37.7
C293	4030017460	S.CER ECJ0EB1E102K	T	39.5/36.6
C301	4030011600	S.CER C1608 JB 1E 104K-T	B	69.1/47.5
C302	4030011600	S.CER C1608 JB 1E 104K-T	T	81.8/39.2
C303	4030011280	S.CER C1608 CH 1H 271J-T	B	70.5/38.5
C304	4030016790	S.CER ECJ0EB1C103K	T	63.8/42.2
C305	4030006900	S.CER C1608 JB 1H 103K-T	B	58.7/19.9
C306	4030007020	S.CER C1608 CH 1H 120J-T	B	64.6/21.5
C307	4030016790	S.CER ECJ0EB1C103K	T	38.1/20.2
C311	4030017480	S.CER C1608 JB 1A 474K-T	B	69.5/26.4
C312	4030009490	S.CER C1608 JB 1H 821K-T	B	68.9/33.3
C313	4030006880	S.CER C1608 JB 1H 472K-T	B	60.5/33.8
C314	4030007100	S.CER C1608 CH 1H 560J-T	B	63.9/34.9
C315	4030016790	S.CER ECJ0EB1C103K	T	62/25.6
C316	4510008540	S.ELE EEE1CA100SR	T	65/22.5
C317	4030011810	S.CER C1608 JB 1A 224K-T	B	68.9/41.3
C318	4030007090	S.CER C1608 CH 1H 470J-T	B	62.2/47.5
C322	4030017490	S.CER C1608 JB 1A 105K-T	B	60.5/48.8
C323	4030017790	S.CER ECJ0EB1E682K	T	25.2/11.7
C330	4030016790	S.CER ECJ0EB1C103K	T	58.2/6.2
C331	4030016790	S.CER ECJ0EB1C103K	T	18.8/10.2
C332	4030017460	S.CER ECJ0EB1E102K	T	26.7/47.5
C333	4030016790	S.CER ECJ0EB1C103K	T	26.7/45.6
C334	4030017400	S.CER ECJ0EC1H220J	T	68.2/4.9
C335	4030017460	S.CER ECJ0EB1E102K	T	67.3/4.9
C336	4030017460	S.CER ECJ0EB1E102K	T	66.4/4.9
C338	4030017460	S.CER ECJ0EB1E102K	T	72.3/5.2
C339	4030017420	S.CER ECJ0EC1H470J	T	73.2/5.2
C340	4030017420	S.CER ECJ0EC1H470J	T	63.8/16.4
C341	4030017420	S.CER ECJ0EC1H470J	T	61.3/16.5
C342	4030017460	S.CER ECJ0EB1E102K	T	56.6/14.1
C343	4030017460	S.CER ECJ0EB1E102K	T	55.7/14.1
C344	4030017730	S.CER ECJ0EB1E471K	T	11.8/40.1
C345	4030017730	S.CER ECJ0EB1E471K	T	10.4/38.3
C346	4030017460	S.CER ECJ0EB1E102K	T	28.5/20
C347	4030017680	S.CER ECJ0EC1H820J	T	30.4/19
C348	4030017680	S.CER ECJ0EC1H820J	T	14.4/54.9
C349	4030017460	S.CER ECJ0EB1E102K	T	21.7/56.5
C350	4030016790	S.CER ECJ0EB1C103K	T	45/9.2
C351	4030006900	S.CER C1608 JB 1H 103K-T	B	8.6/30.3
C352	4510008530	S.ELE EEE1HA2R2SR	T	20.6/6.4
C353	4030017490	S.CER C1608 JB 1A 105K-T	B	4.2/38.7
C354	4030017460	S.CER ECJ0EB1E102K	T	3.6/39.4
C355	4510004591	ELE 16 ME 470 HC		
C356	4510004591	ELE 16 ME 470 HC		
C357	4030016930	S.CER ECJ0EB1A104K	T	8.1/38.3
C358	4030017420	S.CER ECJ0EC1H470J	T	8.1/36.6
C359	4030017420	S.CER ECJ0EC1H470J	T	9.4/38.3
C360	4030017460	S.CER ECJ0EB1E102K	T	13.1/40
C361	4030017460	S.CER ECJ0EB1E102K	T	14.7/40
C369	4510004601	ELE 16 ME 1000 HC		
C370	4030011600	S.CER C1608 JB 1E 104K-T	T	13.9/53.8
C375	4030016930	S.CER ECJ0EB1A104K	T	49.3/32.3
C377	4030017420	S.CER ECJ0EC1H470J	T	2.4/50.9
C378	4030017460	S.CER ECJ0EB1E102K	T	3.3/50.9
C381	4510008500	S.ELE EEE1CA101WP	T	11.2/20.2
C382	4030016790	S.CER ECJ0EB1C103K	T	9.9/24.3
C383	4030011600	S.CER C1608 JB 1E 104K-T	T	9.8/25.4
C384	4030011600	S.CER C1608 JB 1E 104K-T	T	5.6/32.6
C385	4030016790	S.CER ECJ0EB1C103K	T	6.7/32.1
C386	4510008500	S.ELE EEE1CA101WP	T	12.2/30.1
C411	4030016790	S.CER ECJ0EB1C103K	T	7.2/11.1
C412	4030017420	S.CER ECJ0EC1H470J	T	87.7/56.5
C421	4510008530	S.ELE EEE1HA2R2SR	T	83.6/43.7
C423	4030011600	S.CER C1608 JB 1E 104K-T	B	88.6/37.2
C424	4030007090	S.CER C1608 CH 1H 470J-T	B	90.5/49.8
C425	4030007090	S.CER C1608 CH 1H 470J-T	B	89.8/34.1
C426	4510008530	S.ELE EEE1HA2R2SR	T	74.7/42.6
C431	4030011810	S.CER C1608 JB 1A 224K-T	B	7.8/41.4
C441	4030017460	S.CER ECJ0EB1E102K	T	17.8/18.3
C443	4510004591	ELE 16 ME 470 HC		
C447	4510008500	S.ELE EEE1CA101WP	T	91.4/35
C448	4510008530	S.ELE EEE1HA2R2SR	T	92.4/41
C449	4510008560	S.ELE EEE1HAR47SR	T	92.4/45.8
C450	4510008560	S.ELE EEE1HAR47SR	T	97.1/49.7
C453	4510008560	S.ELE EEE1HAR47SR	T	92.4/20.5
C556	4030018900	S.CER ECJ0EB0J474K	T	42.1/45.3
C557	4030016930	S.CER ECJ0EB1A104K	T	41.9/42.6
C558	4030018900	S.CER ECJ0EB0J474K	T	41.4/28.3

## [AF UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C571	4030016930	S.CER ECJ0EB1A104K	T	43.5/44.7
C572	4030017900	S.CER ECJ0EB1C123K	T	47.6/43.1
C573	4030017040	S.CER ECJ0EB1A333K	T	42.6/40.4
C574	4030017040	S.CER ECJ0EB1A333K	T	43.6/40.4
C575	4030017730	S.CER ECJ0EB1E471K	T	43.6/38.6
C576	4030016790	S.CER ECJ0EB1C103K	T	51.4/42.3
C577	4030016790	S.CER ECJ0EB1C103K	T	43.6/36.7
C578	4030016790	S.CER ECJ0EB1C103K	T	45/36.3
C579	4030016790	S.CER ECJ0EB1C103K	T	51.6/35.9
C581	4030016790	S.CER ECJ0EB1C103K	T	49.6/35
C582	4030011810	S.CER C1608 JB 1A 224K-T	B	45.7/24
C584	4030016930	S.CER ECJ0EB1A104K	T	51.4/27.7
C585	4510008540	S.ELE EEE1CA100SR	T	57.7/26.6
C586	4340000310	S.MLR ECHU 1C 333JX5	T	45.2/33.7
C587	4030006870	S.CER C1608 JB 1H 222K-T	B	35.2/33.7
C588	4030011600	S.CER C1608 JB 1E 104K-T	B	36.8/31
C589	4030006900	S.CER C1608 JB 1H 103K-T	B	41.6/36.6
C591	4510008570	S.ELE EEE1CA220SR	T	15/10
J1	6510025180	S.CNR IMSA-9639S-40D-TB	T	65.5/10
J2	6510025190	S.CNR IMSA-9639S-20Y905	T	26.4/14.5
J3	6510016431	S.CNR 53307-1471	T	46.5/28.5
J5	6510003381	CNR B02B-EH-S (LF) (SN)		
J6	6510021441	S.CNR B6B-ZR-SM4-TF (LF) (SN)	T	84.8/53.3
J8	6510025500	CNR OP-12		
J9	6510025500	CNR OP-12		
J11	6510018961	S.CNR B2B-PH-SM4-TB (LF) (SN)	T	18.8/35.8
J12	6510003381	CNR B02B-EH-S (LF) (SN)		
W1	8900015060	CBL OPC-1545 (P0.5N40L110)		
W2	8900015050	CBL OPC-1544 (P0.5N20L170)		

## • HM-126B-3/G

## [REPLACEMENT UNITS]

ORDER NO.	UNIT NAME	COLOR
0800005503	HM-126B-3 ACC [USA]	BLACK
0800009000	HM-126G ACC [USA-01]	GRAY

## [MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R1	7010006890	RES R20J (12 k)		
R2	7010006880	RES R20J (6.8 k)		
R3	7010006900	RES R20J (15 k)		
R4	7010006910	RES R20J (33 k)		
R5	7070001110	RES 15 ERG2SJ		
C1	4010008030	CER DD104 B 471K 50V		
C2	4030017280	S.CER C1608 CH 1H 471J-T-A	T	28.5/20
J1	6510022450	CNR S07B-EH-S		
MC1	7700002120	MIC KUC2123-030245		
S1	2260002330	SW SKHHLPO14A		
S2	2260002340	SW SKHHAM024A		
S3	2260002340	SW SKHHAM024A		
S4	2260002340	SW SKHHAM024A		
SP1	2510001080	SP S36G04K-09		
EP2	9029701901	TUBE IRRAX 0.7 (d) L=4 mm		

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)  
S.=Surface mount

## SECTION 7

## MECHANICAL PARTS AND DISASSEMBLY

### [CHASSIS PARTS]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J1	6510004880	Connector MR-DS-E 01	1
W1	8900015070	Cable OPC-1546	1
W2	8900015080	Cable OPC-1547	1
W3	8900015300	Cable OPC-1616	1
MP1	8210022890	2914 rear panel assembly [Black] (inc. MP2)	1
	8210022900	2914 rear panel (A) assembly [Gray] (inc. MP2)	1
MP3	8930058780	2577 sheet	1
MP4	8930069320	2914 rear seal	1
MP5	8810010610	Screw PH B0 M3 × 8 SUS S	6
MP11	8930069330	2914 chassis	1
MP12	8930034300	1542 ANT seal	1
MP13	8810010610	Screw PH B0 M3 × 8 SUS S	2
MP15	8510017570	2914 module cover	1
MP16	8810010020	Screw PH BT M2.6 × 8 NI-ZU	2
MP17	8930069280	2914 S-bush plate	1
MP18	8930069270	2914 B-bush plate	1
MP19	8810008660	Screw PH BT M3 × 8 NI-ZU	1
MP21	8810008660	Screw PH BT M3 × 8 NI-ZU	6
MP22*	8510017850	2914 earth plate	1
MP31	8810008660	Screw PH BT M3 × 8 NI-ZU	4
MP32	8930069740	2914 S-IC clip	1
MP33	8930069950	Thermally sheet (BE) TC-80CG-AV	1
MP34	8930069750	2914 B-IC clip	1
MP41	8930069310	2914 front seal	1
MP42	8810010620	Screw PH B0 M3 × 12 SUS S	6
MP44	8820001210	2438 screw	1
MP45	8930052290	O ring (AD)	1
MP46	8930055040	2438 cap [USA-02] only	1

### [FRONT PARTS]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MC1	0800005503	Microphone HM-126B-3 [Black]	1
	0800009000	Microphone HM-126G [Gray]	1
MP1	8210022850	2914 front panel assembly [Black] (inc. MP3, MP6, MP7, MP9)	1
	8210022860	2914 front panel (A) assembly [Gray] (inc. MP3, MP6, MP7, MP9)	1
MP10	8930051970	2345 A-bush plate	1
MP11	8810010020	Screw PH BT M2.6 × 8 NI-ZU	7
MP12	8930069260	2914 earth spring	1
MP21	8930052280	O ring (AC)	3
MP22	8610011370	Knob N312 (ZK) [Black]	2
	8610011640	Knob N312 (B) (GRAY) [Gray]	2
MP23	8610012960	Knob N347 [Black]	1
	8610012980	Knob N347 (A) [Gray]	1

### [MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J1	6510025520	Connector IMSA-6065B-04Z097-PT1	1
EP2*	6910002161	Case-BM7H-LF	1
EP3*	6910002161	Case-BM7H-LF	1
MP1*	8510017560	2914 VCO case	1
MP2*	8510014890	2577 DBM case	1
MP3*	8510017560	2914 VCO case	1
MP4*	8510014890	2577 DBM case	1
MP7	8930053480	2345 plate	1

\*: Refer to SECTION 9 BOARD LAYOUTS.

### [AF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
W1	8900015060	Cable OPC-1545	1
W2	8900015050	Cable OPC-1544	1

### [LOGIC BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
DS1	5030002390	LCD HLM7784-010100	1
MP1	8930058440	2577 LCD holder	1
MP2	8210019060	2577 reflector	1
MP3	8930058910	2577 LCD sheet	1
MP4	8930058900	Rubber sheet (BB)	2

### [SQL BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
R1	7210003150	Variable resistor TP96N97-15SK-10KB-2685	1

### [DIAL BOARD]

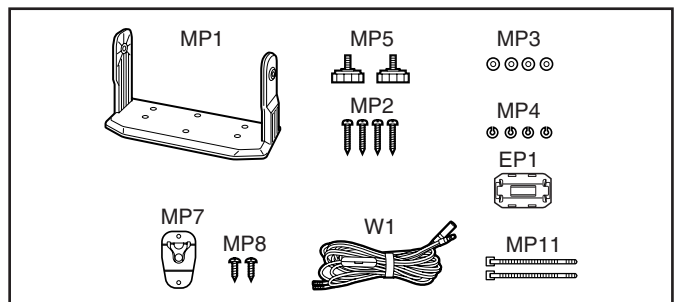
REF. NO.	ORDER NO.	DESCRIPTION	QTY.
S1	2250000530	Encoder TP90N1007AE20-20F-2914	1
W1	8900015040	Cable OPC-1543	1

### [VR BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
R1	7210003150	Variable resistor TP96N97-15SK-10KB-2685	1

### [ACCESSORIES]

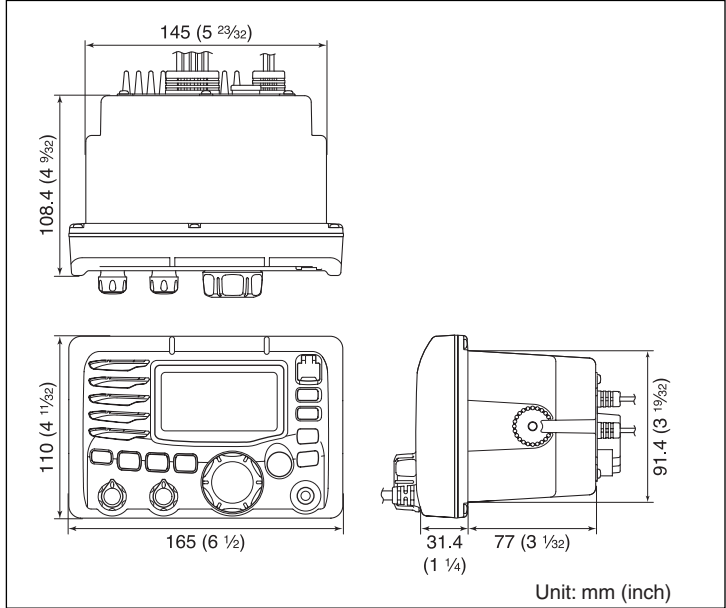
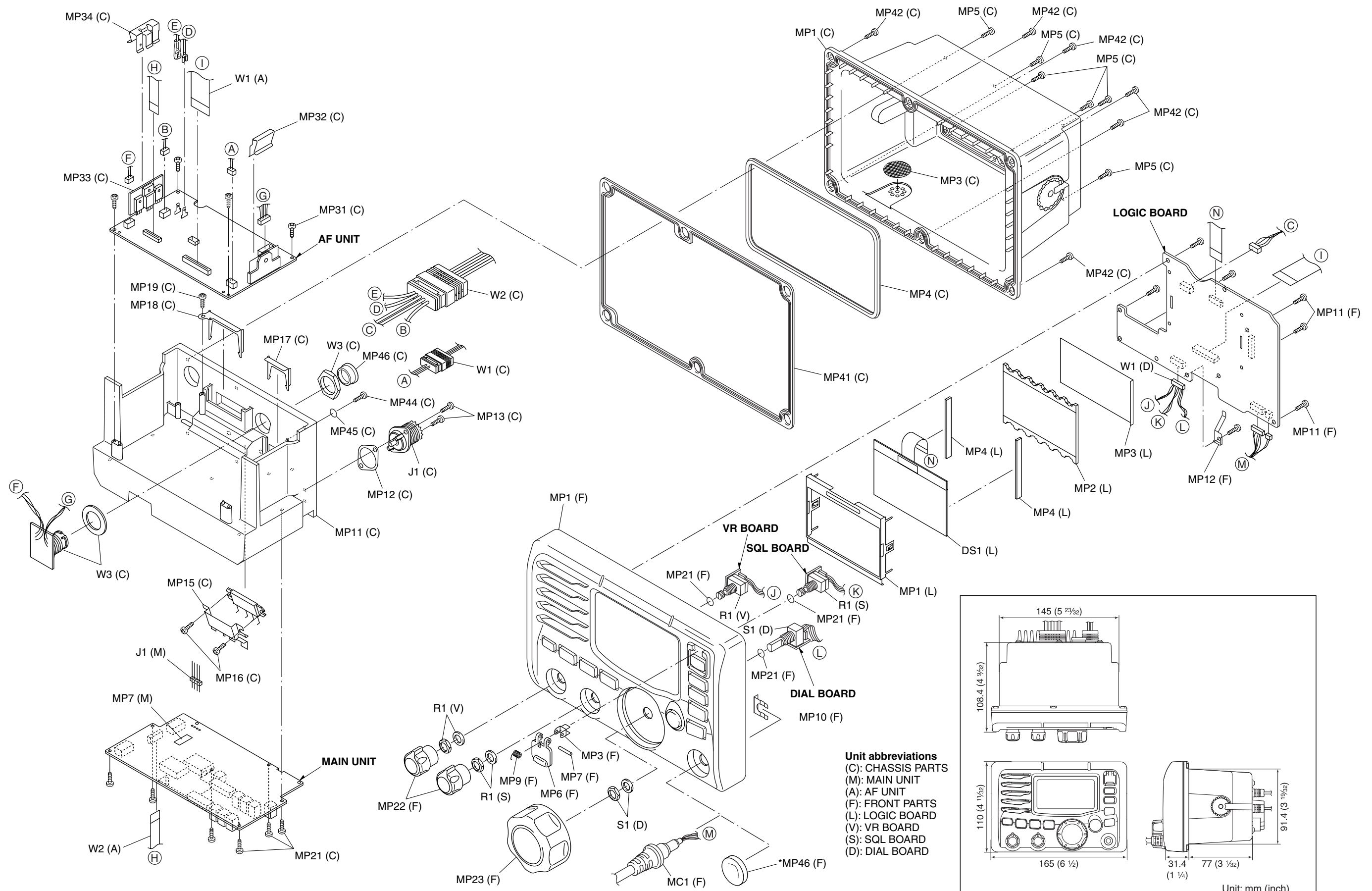
REF. NO.	ORDER NO.	DESCRIPTION	QTY.
W1	8900009041	Cable OPC-891A	1
EP1	6910013530	Bead ZCAT2035-0930A-BK	1
MP1	8010018154	2345 mobile bracket-4 ZK [Black]	1
	8010020464	2345 mobile bracket (C)-4 [Gray]	1
MP2	8810001490	Screw PH A M5 × 20 SUS	4
MP3	8850000180	Flat washer M5 SUS	4
MP4	8850000500	Spring washer M5 SUS	4
MP5	8610010561	2040 knob bolt-1 [Black]	2
	8820001271	2040 knob bolt (C)-1 [Gray]	2
MP7	8950005110	2289 mic hanger	1
MP8	8810004700	Screw PH A M3 × 16 SUS	2
MP11	8950000180	Cable tie -80	2



### Screw abbreviations

A, B0, BT: Self-tapping  
 PH: Pan head ZK: Black  
 NI-ZU: Nickel-Zinc  
 SUS: Stainless





• HM-126B/G

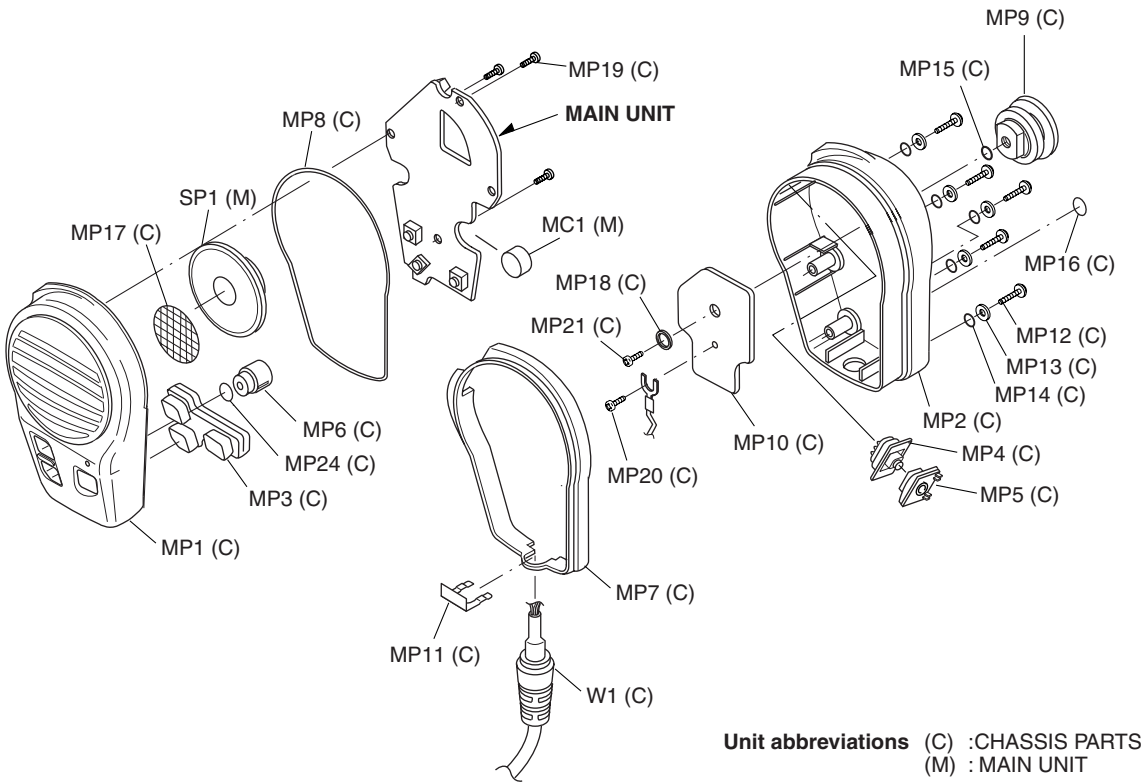
[CHASSIS PARTS]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
W1	8900014820	Cable OPC-948 [Gray]	1
	8900013590	Cable OPC-949 [Black]	1
MP1	8210022750	2352 front panel-1 [Gray]	1
	8210021410	2352 front panel (A)-1 [Black]	1
MP2	8210020380	2352 rear panel [Gray]	1
	8210020120	2352 rear panel (A) [Black]	1
MP3	8930052160	2352 key	1
MP4	8930052150	2352 PTT rubber	1
MP5	8930052140	2352 PTT holder	1
MP6	8930052690	2352 MIC rubber	1
MP7	8930052120	2352 rubber	1
MP8	8930052110	2352 main seal	1
MP9	8610010870	2352 hanger knob	1
MP10	8310048760	2352 R-plate	1
MP11	8310048780	2352 mic plate	1
MP12	8820001150	2352 screw	5
MP13	8850001850	ICOM washer (Y)	5
MP14	8930052340	O ring (AE)	5
MP15	8930052350	O ring (AF)	1
MP16	8930053870	2352 sheet (A)	1
MP17	8930053040	2352 SP net	1
MP18	8850001610	Spring washer M4 SUS	1
MP19	8810009260	Screw PH BT 2 × 6 NI	3
MP20	8810008900	Screw PH M3 × 6 NI	1
MP21	8810009240	Screw BiH M4 × 10 ZK	1
MP24	8930061010	2715 mic sheet	1

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MC1	7700002120	Microphone KUC2123-030245	1
SP1	2510001080	Speaker S36G04K-9	1

**Screw abbreviations**      BT: Self-tapping  
PH: Pan head      BiH: Binding head  
ZK: Black      SUS: Stainless  
NI: Nickel



**Unit abbreviations** (C) : CHASSIS PARTS  
(M) : MAIN UNIT

SECTION 8 SEMICONDUCTOR INFORMATION

• TRANSISTORS AND FET's

<b>2SA1576A T106 R</b> (Symbol: FR) 	<b>2SB1143 S</b> (Symbol: B1143) 	<b>2SB1201 S</b> (Symbol: B1201) 	<b>2SC4081 T106 S</b> (Symbol: BS) 	<b>2SC4226 T1 R25</b> (Symbol: R25) 
<b>2SK1069 4 TL</b> (Symbol: FJ) 	<b>3SK292</b> (Symbol: UK) 	<b>FMW1 T148</b> (Symbol: W1) 	<b>KRA304</b> (Symbol: PD) <b>KTA2015Y</b> (Symbol: ZY) 	<b>KRC402</b> (Symbol: NB) 
<b>KRC404</b> (Symbol: ND) <b>KTC2875-B</b> (Symbol: MB) <b>KTC3880S</b> (Symbol: HG) 	<b>KTC4075 BL</b> (Symbol: LBL) <b>KTC4080</b> (Symbol: HH) 	<b>PMBFJ310</b> (Symbol: M10) 	<b>TPC6104</b> (Symbol: S3D) 	<b>XP6501 AB</b> (Symbol: 5N) 

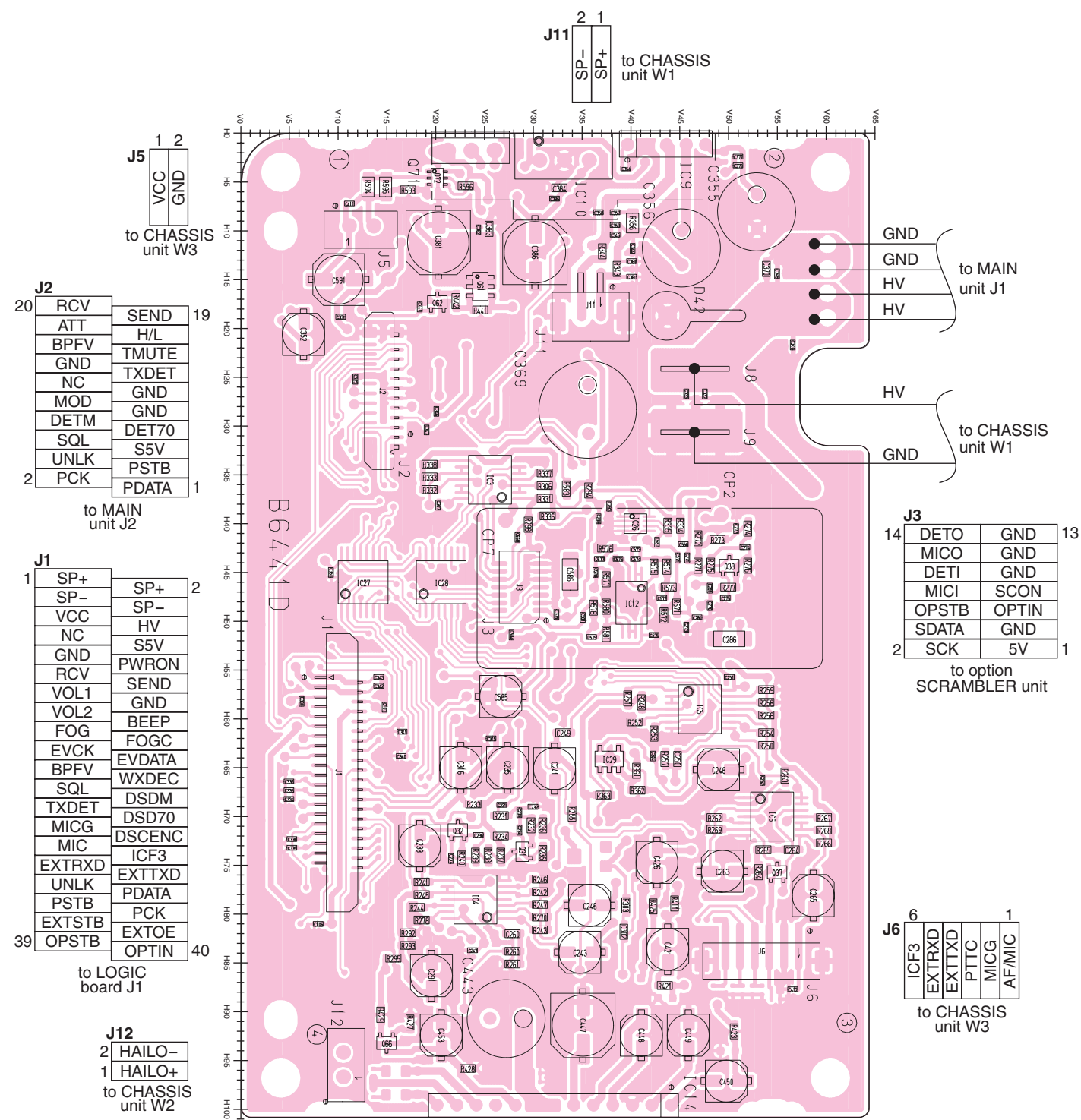
• DIODES

<b>1SS372</b> (Symbol: N9) 	<b>AVR-M1005C080MTABB</b> 	<b>DSA3A1</b> (Color: Green) 	<b>HSB88WSTR</b> (Symbol: Silver line) 	<b>HSM88ASR TR</b> (Symbol: C3) 
<b>HVC350B</b> (Symbol: B0) 	<b>HVC358B</b> (Symbol: B2) 	<b>KDS122</b> (Symbol: C3) 	<b>KDS4148U</b> (Symbol: UH) 	<b>KDV214E</b> (Symbol: UO) 
<b>L308CCB</b> (Symbol: CC) 	<b>MA77</b> (Symbol: 4B) 	<b>MA8036 L</b> (Symbol: 3_6) 	<b>MA8062 M</b> (Symbol: 6-2) 	

## SECTION 9 BOARD LAYOUTS

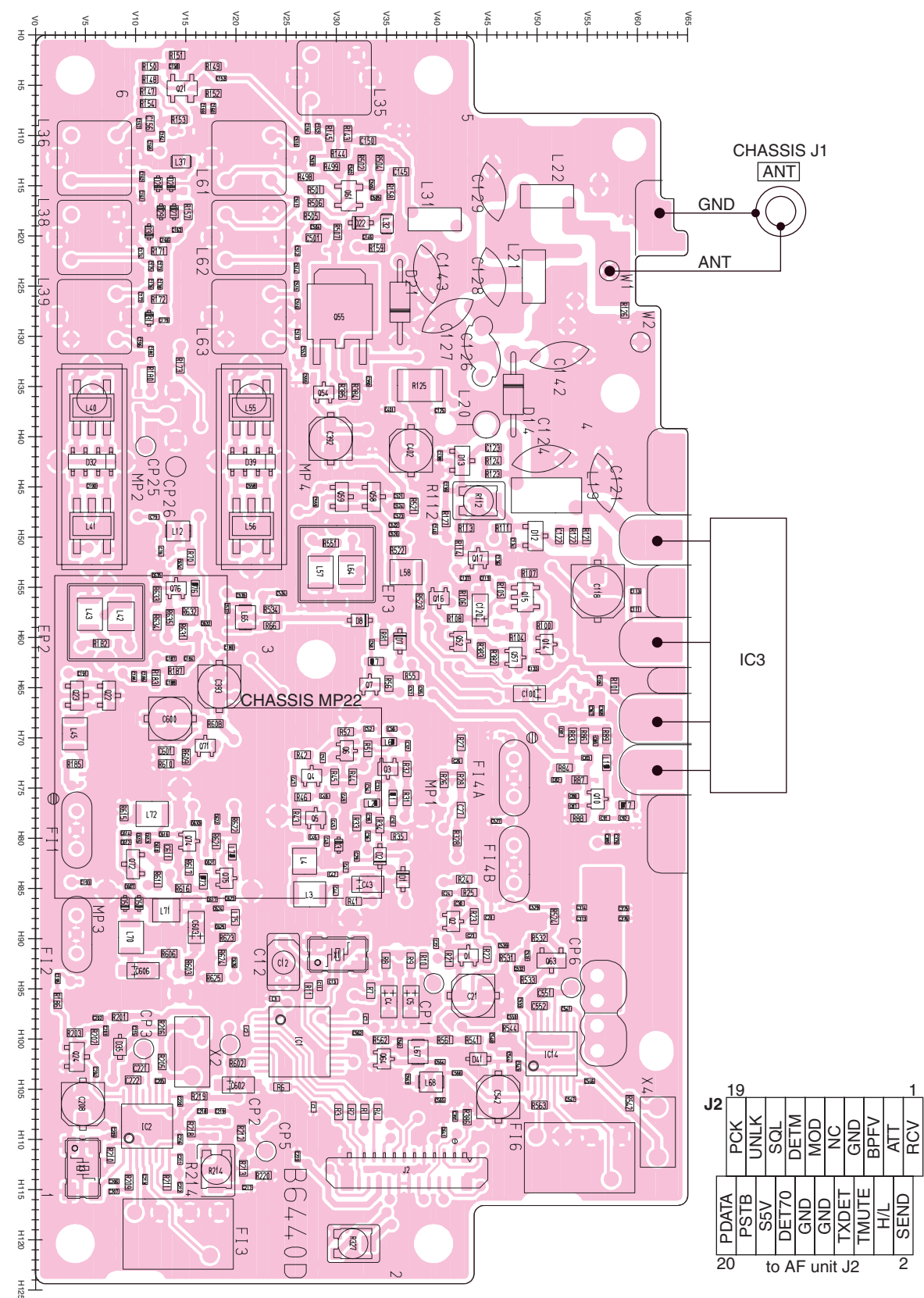
## 9-1 AF UNIT

- TOP VIEW



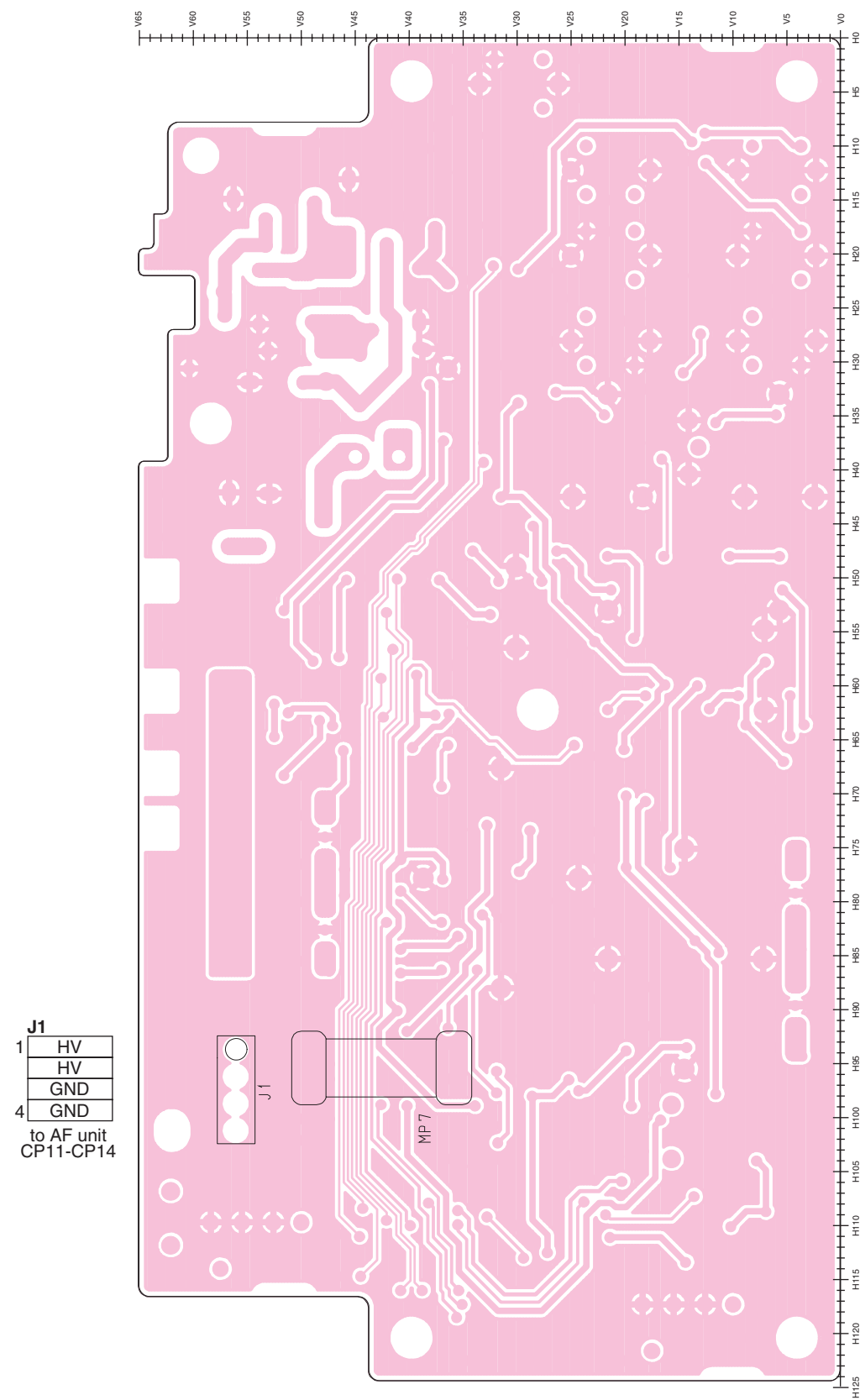
## 9-2 MAIN UNIT

- TOP VIEW

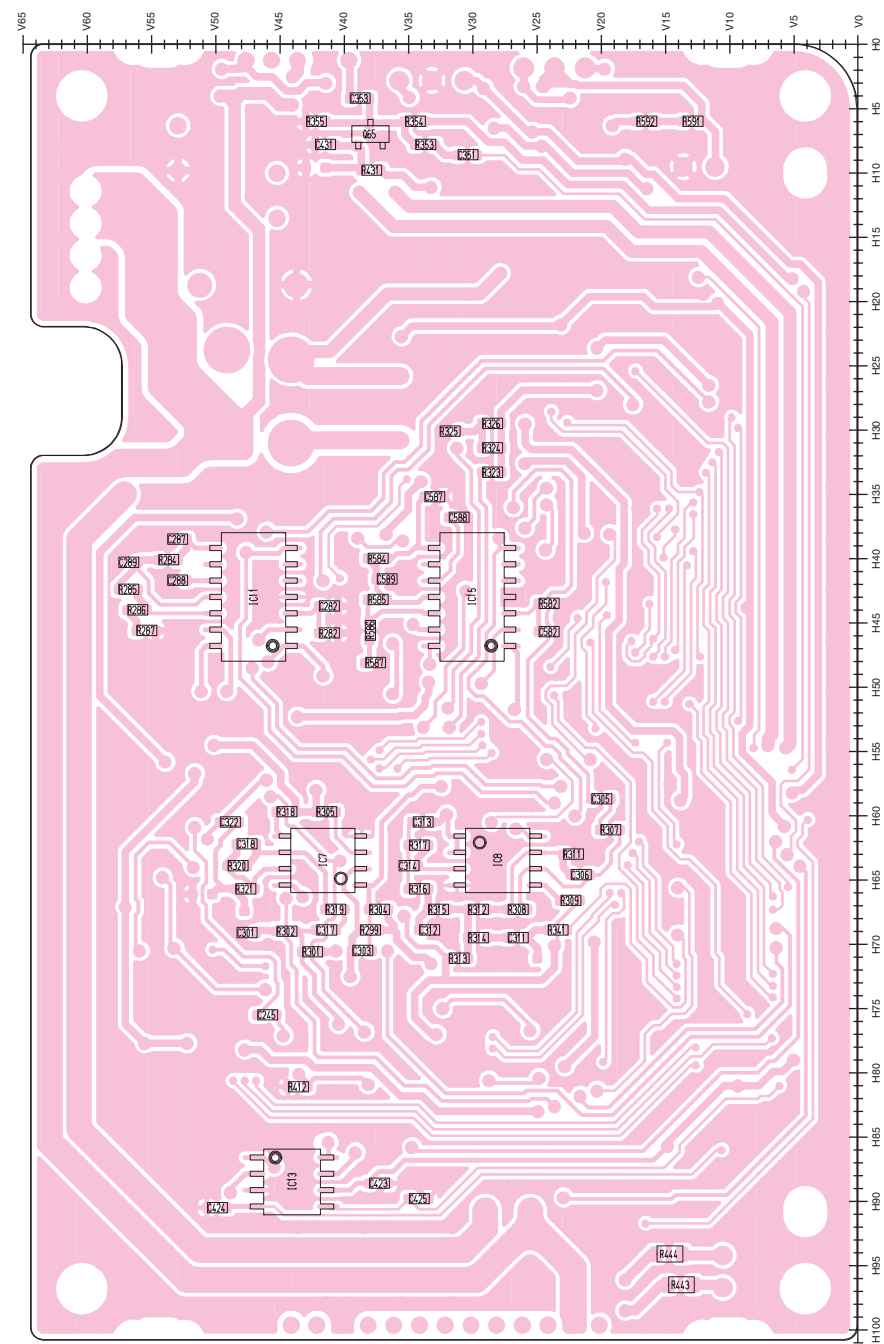




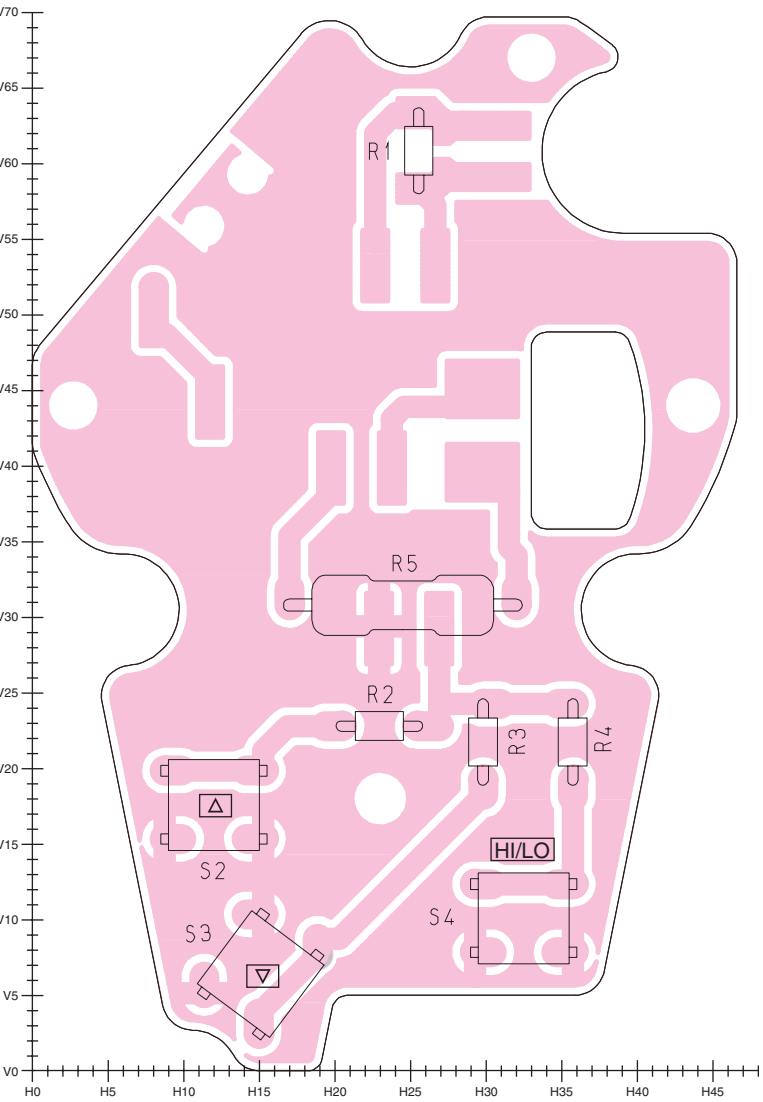
• BOTTOM VIEW (MAIN UNIT)



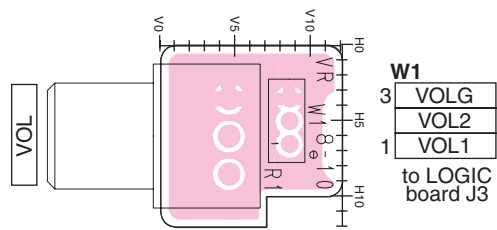
• BOTTOM VIEW (AF UNIT)



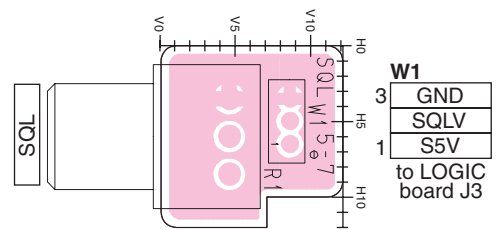
9-3 HM-126B/G  
• TOP VIEW



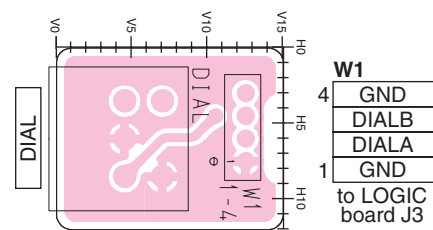
9-4 VR BOARD  
• TOP VIEW



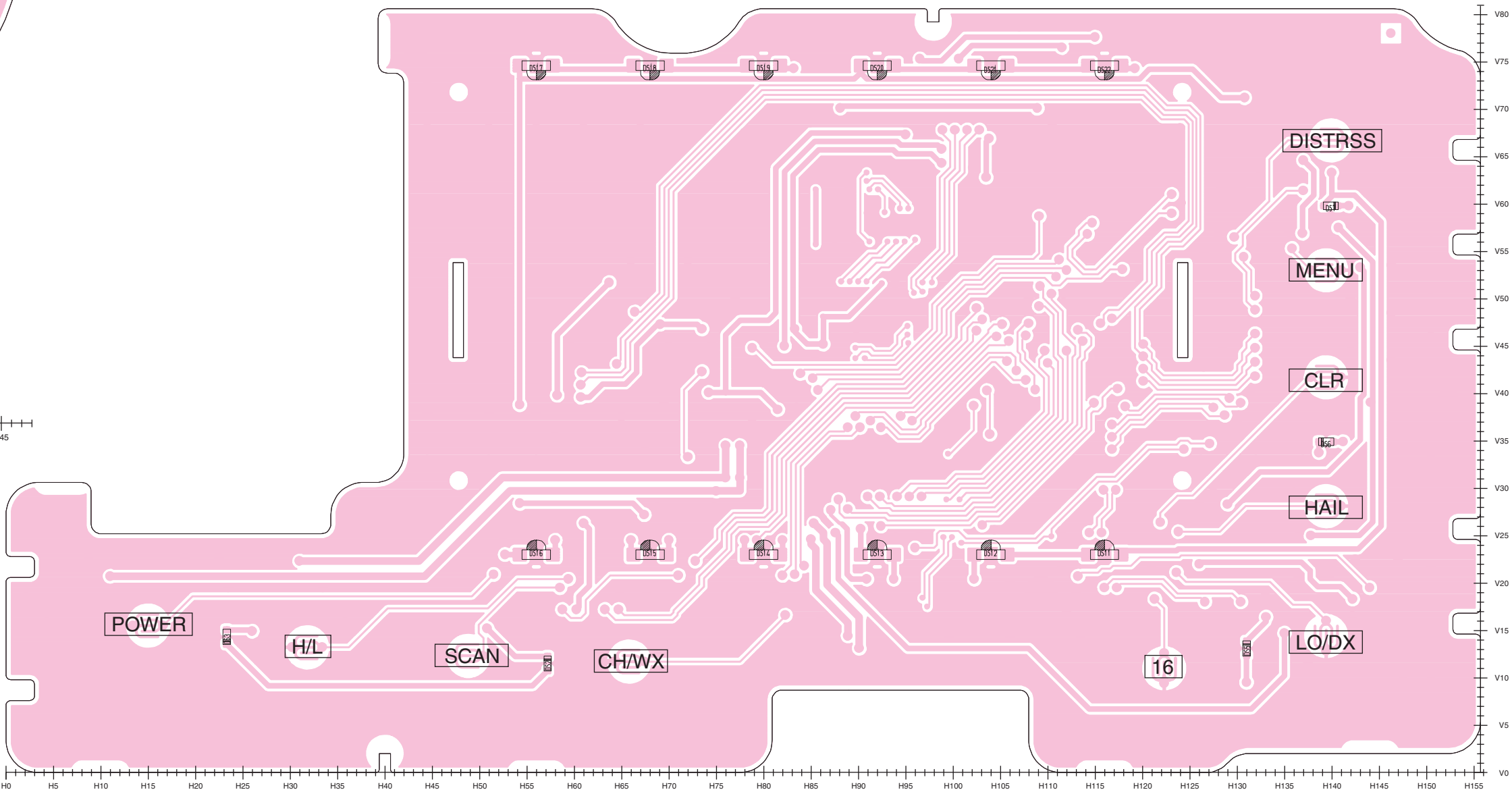
9-5 SQL BOARD  
• TOP VIEW



9-6 DIAL BOARD  
• TOP VIEW

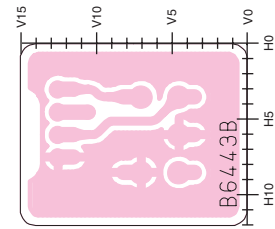


9-7 LOGIC BOARD  
• TOP VIEW

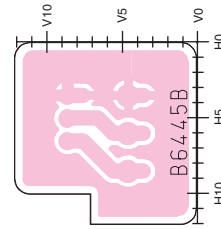




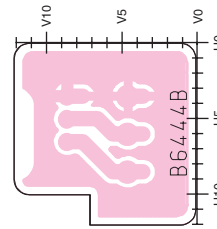
- **BOTTOM VIEW (DIAL BOARD)**



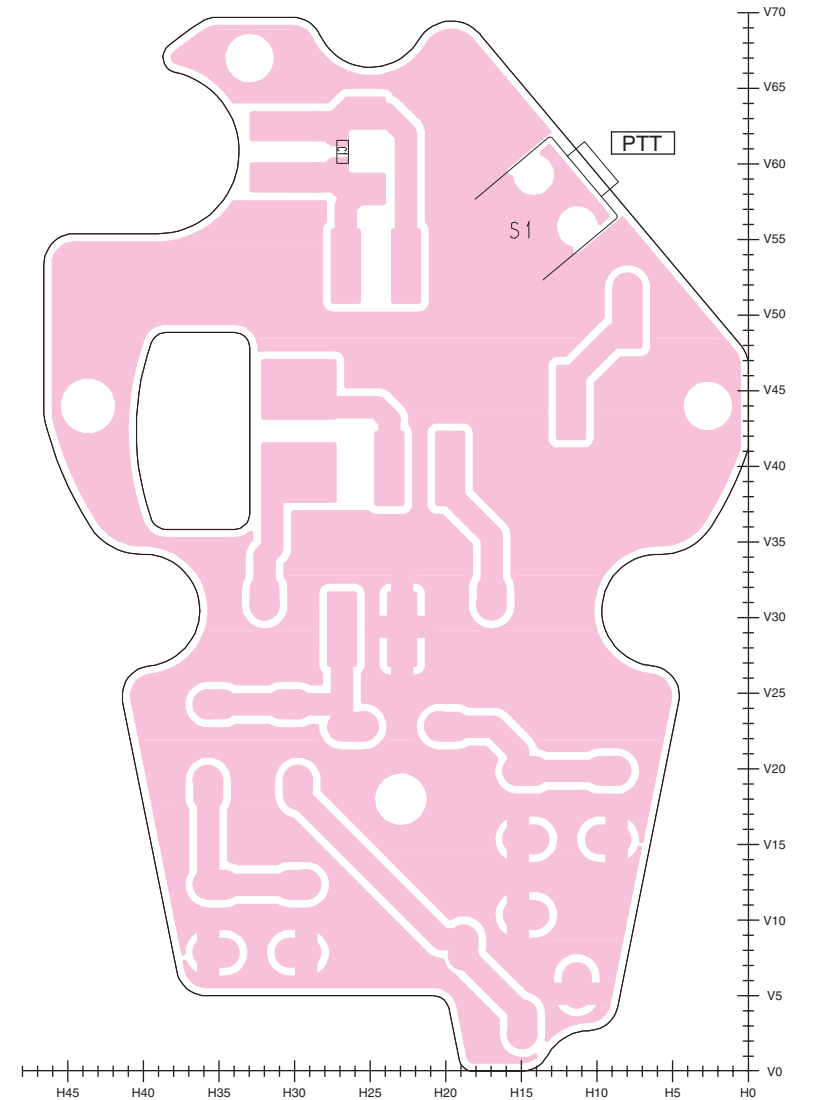
- **BOTTOM VIEW (SQL BOARD)**



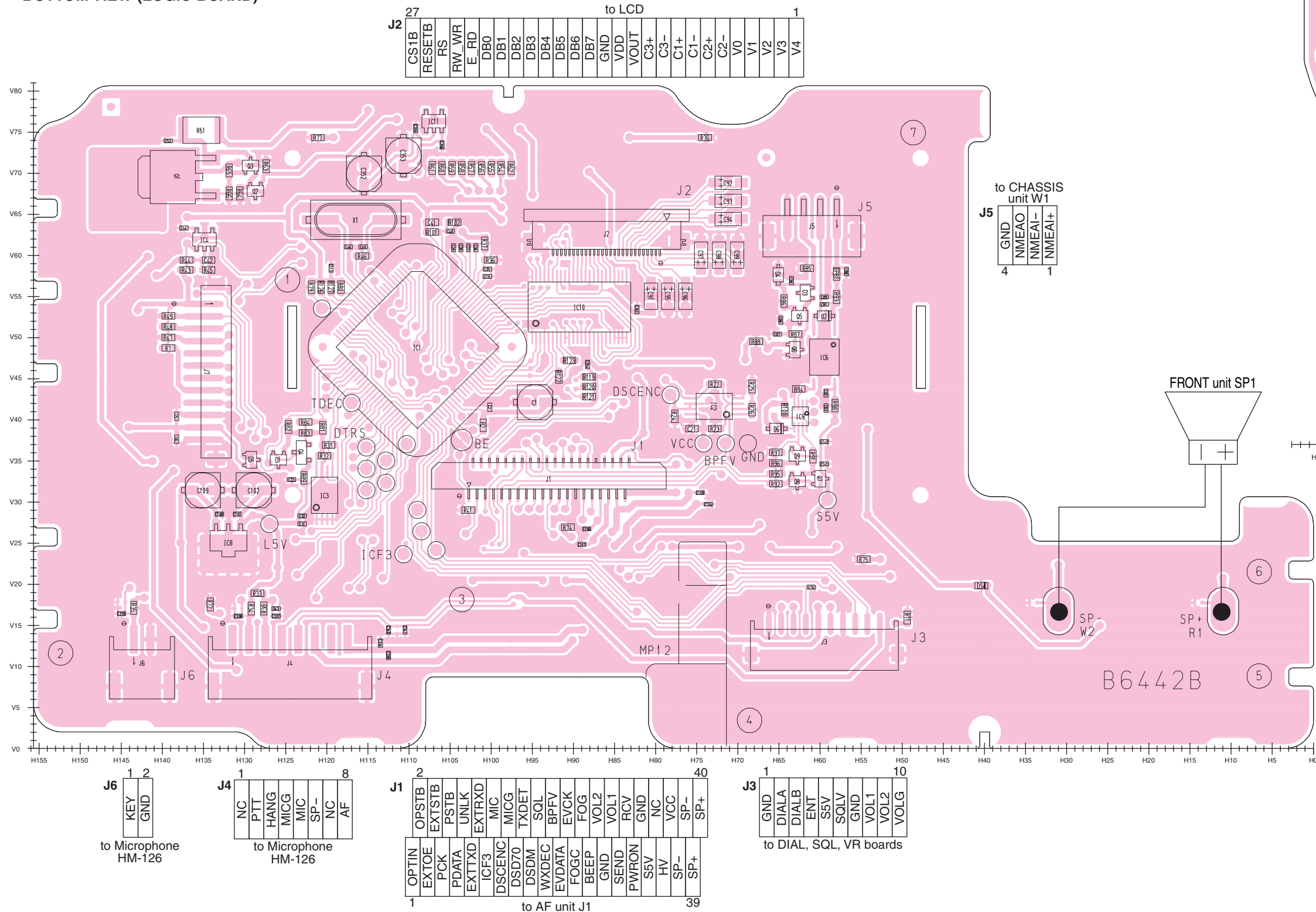
- **BOTTOM VIEW (VR BOARD)**



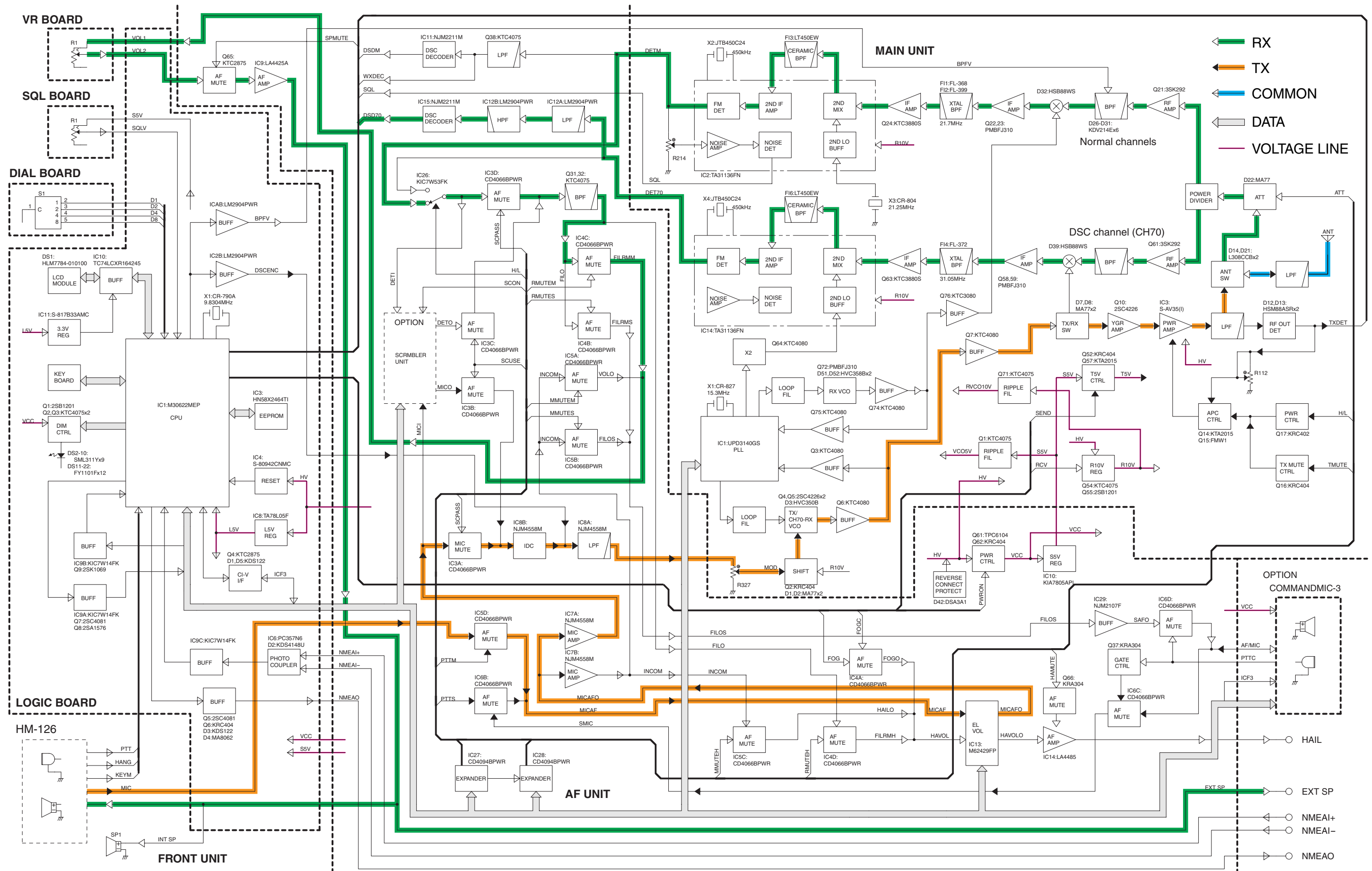
- **BOTTOM VIEW (HM-126B/G)**



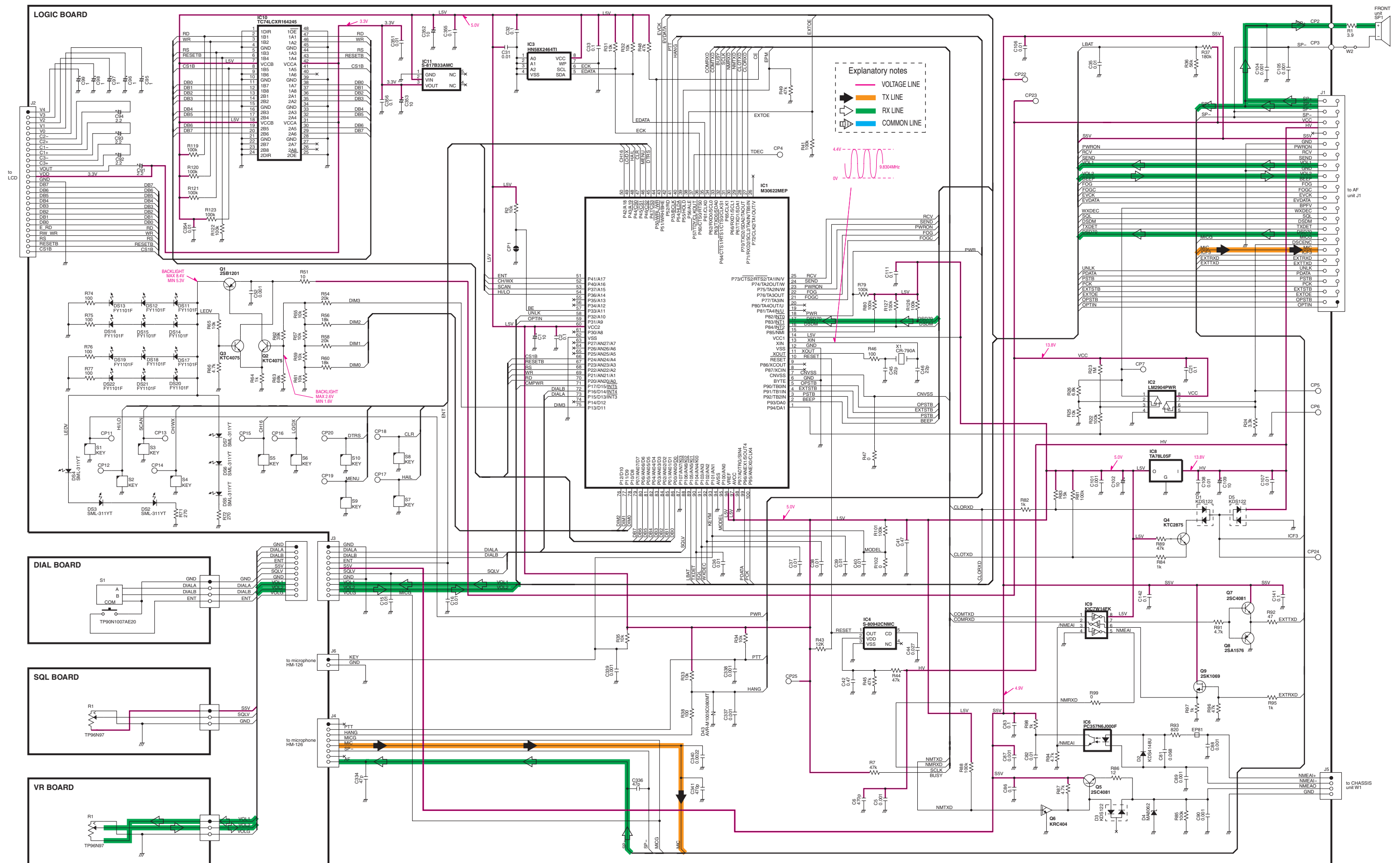
- **BOTTOM VIEW (LOGIC BOARD)**



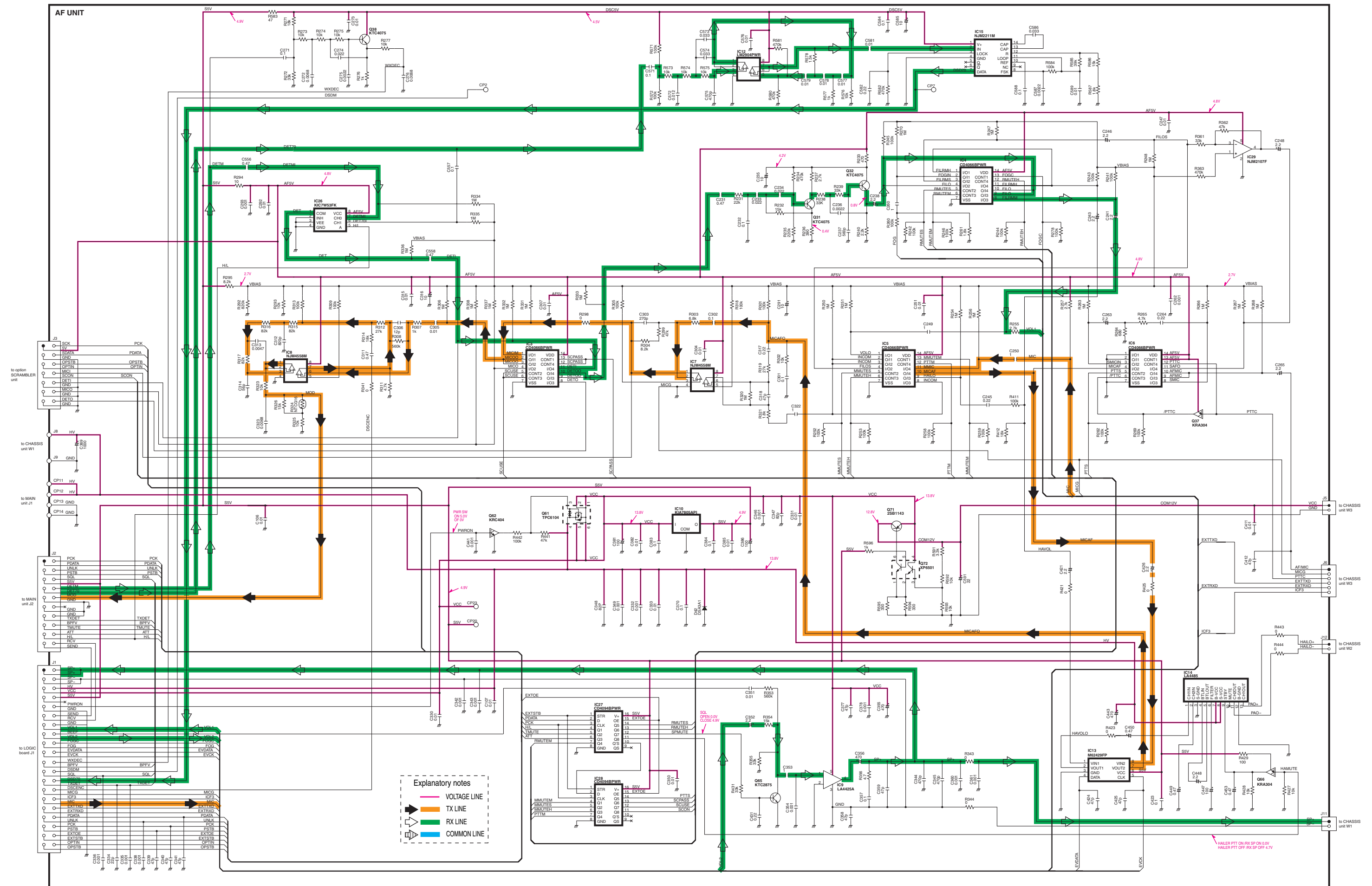
## SECTION 10 BLOCK DIAGRAM



## 11-1 FRONT UNIT

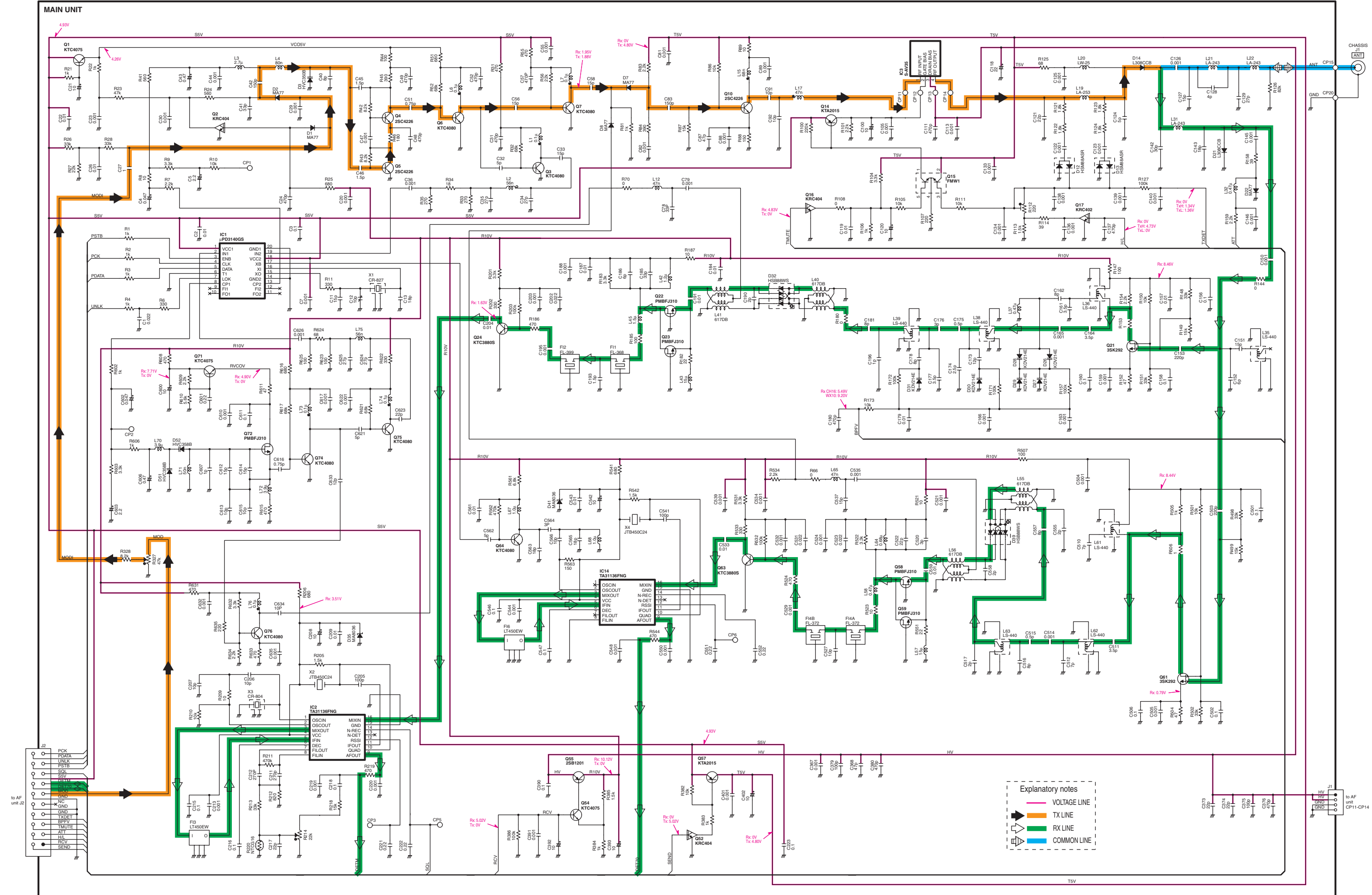


## 11-2 AF UNIT





11-3 MAIN UNIT



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